L 17654-66 EWT(1)

ACC NR: AP6002723 SOURCE CODE: UR/0056/65/049/006/1824/1830

AUTHORS: Inopin, Ye. V.; Tishchenko, B. I.; Shebeko, A. V. 28 27 B

ORG: Physicotechnical Institute, Academy of Sciences UkrSSR (Fiziko-tekhnicheskiy institut Akademii nauk UkrSSR)

TITLE: Description of inelastic diffraction scattering 21,44,55 by the complex angular momentum method

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 6, 1965, 1824-1830

TOPIC TAGS: particle diffraction, inelastic scattering, scattering cross section, alpha particle reactions

ABSTRACT: A new method, which has recently been proposed by one of the authors (Inopin, ZhETF v. 48, 1620, 1965) for the description of elastic diffraction scattering by composite nuclei, and which is shown in a companion paper (Inopin, with A. A. Kresnin ZhETF v. 49, 1796, 1965, ACC NR: AP6002720) to be in agreement with the available experimental data, is used to obtain a unified description of elastic

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L 17654-66
ACC NR: AP6002723

and inelastic scattering of spinless particles. A simple analytic expression for the inelastic scattering cross section is derived on the basis of the complex angular momentum method. The S-matrix parameters introduced in the earlier papers are used for the inelastic scattering in this paper. The expression obtained yields the well known Blair phase rule, for which a more rigorous proof is obtained in this paper than in the past. The results are compared with experiments on the scattering of α particles by five different nuclei (Mg^{24}, Ti^{48}, Ni^{58}, Zn^{66}, Sr^{88}), and the comparison indicates satisfactory qualitative agreement between the theory and the experimental data. The authors thank N. Austern and J. S. Blair for sending a preprint of their paper before publication, and to A. A. Kresnin for valuable discussions. Orig. art. has: 5 figures, 16 formulas and 3 tables.

SUB CODE: 20/ SUBM DATE: 02Jun65/ ORIG REF: 004/ OTH REF: 012

Card 2/2 nst

ACC NR: AP6020225 SOURCE CODE: UR/0056/66/050/006/1674/1681

AUTHOR: Tishchenko, B. I.; Shebeko, A. V.

ORG: Physicotechnical Institute, Academy of Sciences, Ukrainian SSR (Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR)

TITLE: Contribution to the theory of diffraction scattering of particles by nuclei based on the method of complex angular moments

SOURCE: Zh eksper i teor fiz, v. 50, no. 6, 1966, 1674-1681

TOPIC TAGS: particle diffraction, Coulomb scattering, S matrix, elastic scattering, scattering cross section

ABSTRACT: Expressions for elastic and inelastic diffraction scattering of particles by nuclei, involving the excitation of collective states, have been obtained by the method of complex angular moments. It has been assumed that the modulus and the phase shift of the S matrix may possess poles in the complex angular momentum plane. It has been shown that the presence of poles in the S matrix phase near the

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L 4369-66

ACC NR: AP6020225

poles of its modulus and the Coulomb interaction explains a number of interesting features of the behavior of the differential scattering cross sections, such as the decrease of oscillation amplitudes of the cross sections with growth of the nuclear charge, the possibility of inelastic scattering cross-section oscillations when oscillations are absent in elastic scattering, and the decrease of oscillation amplitude with the growth of the scattering angle. It has been shown that "competition" between the Coulomb and nuclear phases can explain the "cross-section drop" (the presence of one or two cross-section minima which are much lower than the adjoining ones). It has been mentioned that the value $\delta(l_0)$, where l_0 is the boundary nuclear angular momentum, can readily be estimated. The authors thank Ye. V. Inopin for his interest in this work and for a number of valuable discussions. Orig. art. has: 33 formulas. [Based on authors' abstract] [NT]

SUB CODE: 20/ SUBM DATE: 28Jan66/ ORIG REF: 004/ OTH REF: 006/

Card 2/2

TISHCHENKO, B.S., inzh.

Calculation of the burn-out of lean coal and anthracite in coal dust furnaces. Teploenergetika 11 no.5:83-86 My'64. (MIRA 17:5)

1. Odesskiy tekhnologicheskiy institut.

TISHCHENKO, B.S.

Approximate calculation of the burning-out of a flame tongue of pulverized lean or hard coal. Trudy Od. tekh. inst. 14: 47-54 '62. (MIRA 16:12)

GOKHSHTEYN, D.P., doktor tekhn. nauk; DEKHTYAREV, V.L., kand. tekhn. nauk; OLESEVICH, Ye.K., inzh.; TISHCHENKO, B.S., inzh.; KHALAYDZHI, V.N., inzh.; RYABOVA, A.S., inzh.; BYKOV, V.N.; KOZOREZ, A.I., inzh.

Carbon dioxide system with medium power output. Energomashinostroenie 10 no.11:20-22 N '64 (MIRA 18:2)

KISLITSYN, A.; TISHCHENKO, D.

Pitch formation in the distillation of wood tars. Zhur. prikl. khim. 33 no.8:1909-1911 Ag '60. (MIRA 13:9)

1. Lesotekhnicheskaya akademiya, Leningrad.
(Pitch) (Wood tar)

L 27882-65

ACCESSION NR: AT5004[illegible]

AUTHOR: Kisa[illegible]ko, E. . .

TITLE: Estimate of the factors influencing the process of combustion of lean coal and anthracite in pulverized-coal boiler furnaces

SOURCE: AN UkrSSR. Institut teplofiziki. Teplofizika i teplotekhnika (Thermophysics and heat engineering). Kiev, Naukova dumka, 1[illegible], 1[illegible]

TOPIC TAGS: combustion analysis, burning rate measurement, coal

ABSTRACT: The author points out that incomplete combustion of pulverized lean coal and anthracite in electric-station boilers can reach 4%, that there are no reliable theoretical means of calculating the degree of combustion, and that the usual station tests fail to take account of numerous factors. He consequently proposes an new method for calculating the [illegible] different theory of combustion [illegible] position of the [illegible]

Card 1

L 27882-65

ACCESSION NR: AT5004224

the coefficient of incomplete combustion was checked experimentally for pulverized-coal burners of the boilers in various electric stations, and references to the published test reports. The experimental results agree with [illegible] by the formula within [illegible].

ASSOCIATION: Moskovskiy tekhnologicheskiy institut im. M. V. Lomonosova (Moscow Technological Institute)

SUBMITTED: 10Aug64 ENCL: 00 SUB CODE: FP

NR REF SOV: 012 OTHER:

ACCESSION NR: AP[illegible]

AUTHOR: Gokhshteyn, D. P. (Doctor of technical sciences); Dekhtyarev, [illegible] (Candidate of technical sciences) [illegible] [illegible]

TITLE: Medium power carbon dioxide power installation

SOURCE: Energomashinostroyeniye, no.11, 1964, 20-22

TOPIC TAGS: electric power plant, carbon dioxide, electric power source

ABSTRACT: Theoretical principles for carbon dioxide power installations worked out at the Odessa Technological Institute imeni M. V. Lomonosov have shown the possibility for building high power compact units which are more economical than steam and gas turbines. Results of research on an [illegible]ation of this type with a power of [illegible] Mw, the [illegible]-50, show that the efficiency advantage of the carbon dioxide installation over steam units increases with a transition from high to medium power.

Card 1/3

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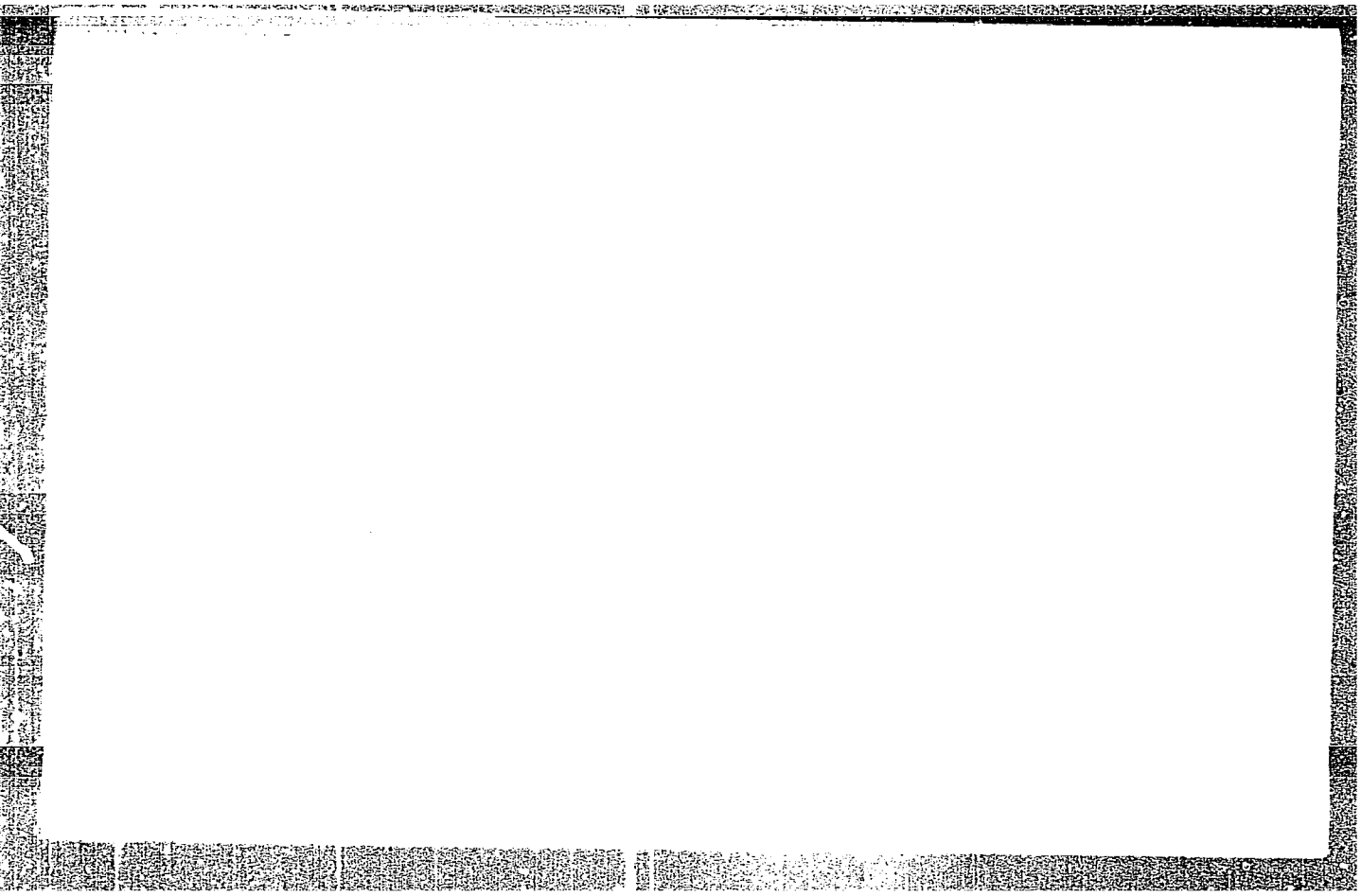
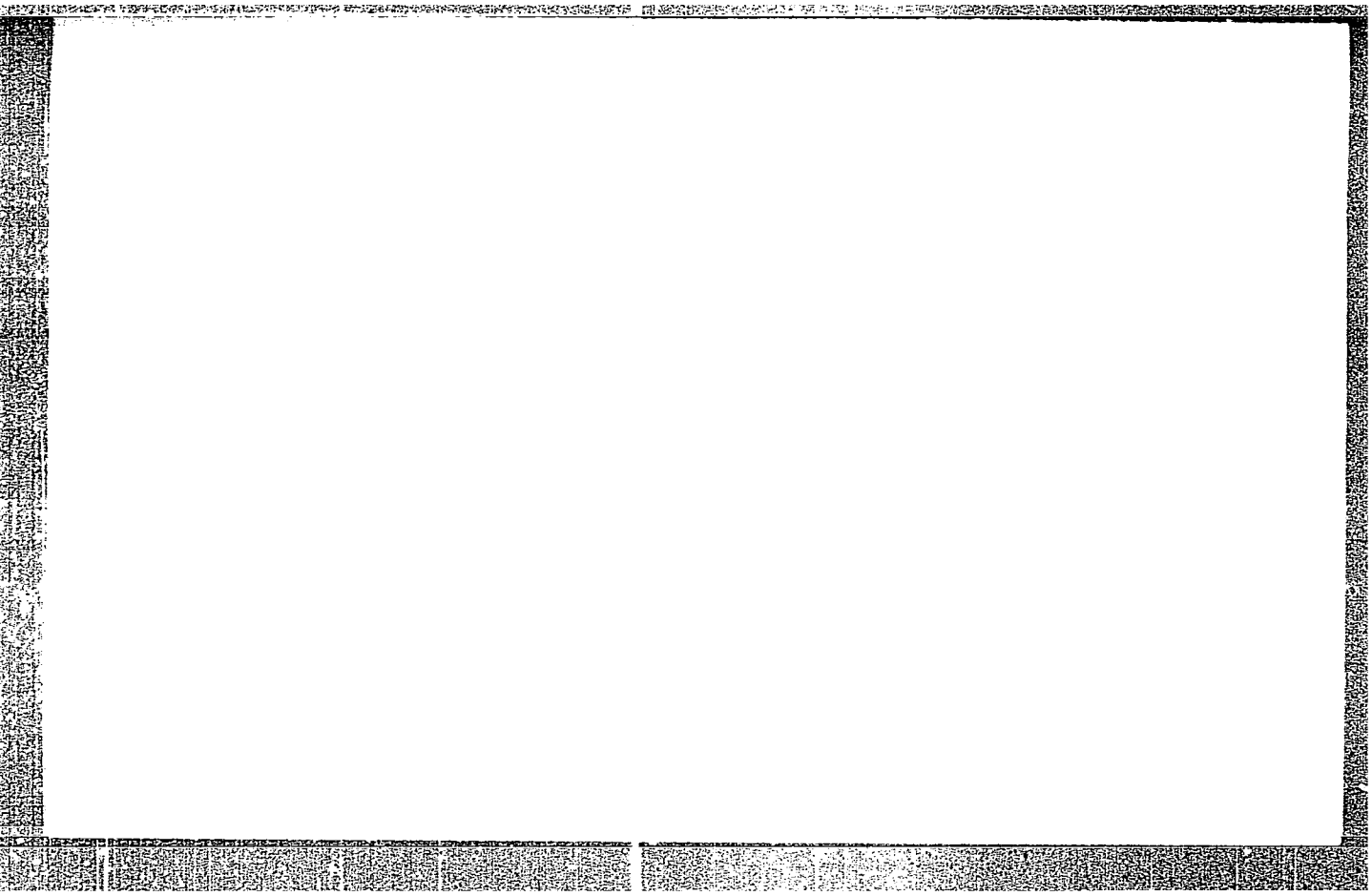


APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755810017-6"



S/185/60/005/004/001/021
D274/D306

AUTHORS: Kresnin, A.A. and Tishchenko, B.Y.

TITLE: Polarization effects in the scattering of electrons by nuclei

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 5, no. 4, 1960, 437-443

TEXT: The scattering cross-section, the azimuthal asymmetry and the polarization of the scattered electrons are calculated. Electron scattering by nuclei with Yukawa charge-density distribution is considered in the second Born-approximation. The Yukawa charge-density distribution is

$$\rho(r) = \frac{x^2}{4\pi}.\frac{e^{-xr}}{r} \qquad (4)$$

For describing the polarization of the scattered electrons, the method of density matrices is used. For the cross-section one ob-

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tains

$$\frac{d\sigma}{d\Omega} = \left(\frac{Ze^2}{2mv^2\sin^2 x}\right)^2 \frac{(1 - v^2)(1 - v^2\sin^2 x)}{(1 + \alpha^2\sin^2 x)^2} \times$$

$$\times \left\{1 + Ze^2 v \frac{1 + \alpha^2\sin^2 x}{1 - v^2\sin^2 x} \sin x\left[\delta_1 - (1 - v^2)^{\frac{1}{2}} \operatorname{tg} x\,(\vec{\zeta}_1^{\circ}\vec{n})\delta_2\right]\right\}, \qquad (18)$$

where δ_1 and δ_2 are given by expressions involving v^2, α and trigonometric functions of x, (x being half the scattering angle ϑ, and $\alpha = 2p/\varkappa$). If $\alpha \gg 1$, the cross section is

$$\frac{d\sigma}{d\Omega} = \left(\frac{Ze^2}{2mv^2\sin^2 x}\right)^2 \frac{(1 - v^2)(1 - v^2\sin^2 x)}{(1 + \alpha^2\sin^2 x)^2} \times \qquad (22)$$

$$\times \left\{1 + Ze^2 v \frac{1 + \alpha^2\sin^2 x}{1 - v^2\sin^2 x} \sin x\left[\pi\left(1 - \sin x - \frac{2\alpha^2}{v^2}\sin x(1 - v^2\sin^2 x)\right) + \right.\right.$$

$$\left.\left. + 2(1 - v^2)^{1/2} \frac{\sin^2 x}{\cos x}(\ln\sin x + \alpha^2(1 - \sin x))(\vec{\zeta}_i^{\circ}\vec{n})\right]\right\}.$$

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For $\alpha = 0$, formula (22) coincides with the well-known formula for scattering cross-section of electrons in a Coulomb field. For $\alpha \ll 1$, another expression for the cross-section is obtained. In case of positron scattering, Ze^2 has to be replaced by $(-Ze^2)$. If a polarized electron beam is scattered, azimuthal asymmetry arises, i.e. dependence of cross-section on azimuth φ. Defining the azimuthal asymmetry by

$$\eta_1 = \frac{\frac{d\sigma}{d\Omega}(\varphi = 0) - \frac{d\sigma}{d\Omega}(\varphi = \pi)}{\frac{d\sigma}{d\Omega}(\varphi = 0) + \frac{d\sigma}{d\Omega}(\varphi = \pi)}, \qquad (25)$$

one obtains

$$\eta_1 = -Ze^2 v(1-v^2)^{1/2} \frac{1+\alpha^2 \sin^2 x}{1-v^2 \sin^2 x} \frac{\sin^2 x}{\cos x} \delta_2(\zeta' n). \qquad (26)$$

For the polarization of the scattered electrons one obtains

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$$\vec{\zeta}_f^{\,o} = \vec{\zeta}_i^{\,o} + \frac{(\gamma-1)\sin\theta}{\mu}\{[a_1(A_0+2A_1)+2b_1B_1-2c_1B_2]\vec{k}+ \quad (29)$$

$$+[a_2(A_0+2A_1)+2b_2B_1-2c_2B_2]\vec{l}-2c_3B_2\vec{n}\},$$

μ, a, b, c, A and B are given by expressions involving α, δ, p, Z, e, γ and E, where

$$\gamma = \frac{E}{m} = \frac{1}{\sqrt{1-v^2}} \quad (32)$$

$$\vec{k} = \frac{\vec{p}_1}{|\vec{p}_1|}\ ;\ \vec{l} = [\vec{n}\vec{k}] \quad (33)$$

In the case of scattering of unpolarized electrons, formula (29) reduces to

$$\vec{\zeta}_f^{\,o} = Ze^2v\,(1-v^2)^{\frac{1}{2}}\,\frac{\sin^2x\,1+\alpha^2\sin^2x}{\cos x\,1-v^2\sin^2x}\,\delta\,2\vec{n} \quad (34)$$

An analysis of formula (34) shows that the polarization and azi-

muthal asymmetry of electrons scattered by a nucleus with finite radius is smaller than in the case of electrons scattered by a Coulomb field. With increasing α these quantities decrease; for $\alpha = \alpha_0$ they become zero, and with α further increasing, they change sign. It is noted however, that at the points where δ_2 vanishes, the higher Born-approximations have to be taken into account; therefore, the results are only fully reliable for $\alpha < \alpha_0$. The smaller polarization and azimuthal asymmetry in the case of scattering by nuclei of finite size, as compared to point nuclei, is a result of absence of singularities of the interaction potential between electrons and nuclei of finite radius. Hence such a decrease should take place independent of the charge-density distribution in the nucleus. This conclusion is of a general character and does not depend on the use of the second Born-approximation. There are 7 references: 2 Soviet-bloc and 5 non-Soviet-bloc. The references to the English-language publications read as follows: N.F. Mott, Proc. Roy. Soc., A124, 425, 1929; N.S. Sherman, Phys. Rev., 103, 1601, 1956; R. Dalitz, Proc. Roy. Soc., A206, 509, 1951; R.R. Lewis, Phys. Rev., 102, 537,

Polarization effects...

S/185/60/005/004/001/021
D274/D306

1956,

ASSOCIATION: Fizyko-tekhnichnyy instytut AN USSR (Physicotechnical Institute AS UkrSSR)

SUBMITTED: November 19, 1959

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L 17021-63 EWT(m)/BDS AFFTC/ASD

S/185/63/008/004/003/015

52

AUTHOR: Tishchenko, B. Y.

TITLE: Determination of the charge density of light nuclei with a generalized model

19

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 8, no. 4, April 1963, 431-439

TEXT: The author assumes that the nucleons of the nucleus move in a deformed axisymmetrical potential and that their interaction is accounted for by this potential, so that the charge density of the nucleus amounts to the sum of densities created by the individual nucleons. The charge density created by a single nucleon is determined by the qaudratic modulus of its wave function describing the motion of the nucleon in a deformed axially symmetrical potential. He expands the expression for charge density into a series by Legendre polynomials. The first two coefficients of this expansion determine the mean square radius and quadrupole moment of the nucleus, respectively. The author supplies formulas for finding these values readily for nuclei with $Z \leqslant 20$.

ASSOCIATION: Fizyko tekhnicknyy instytut AN URSR (Physico-Technical Institute of the Ukrainian Academy of Sciences, Khar'kov)

SUBMITTED: September 10, 1962

Card 1/1

Tishchenko, B.Ye.

14(5) PHASE I BOOK EXPLOITATION SOV/2820

Vsesoyuznyy nauchno-issledovatel'skiy institut geofizicheskikh metodov razvedki

Razvedochnaya i promyslovaya geofizika, vyp. 26 (Exploration and Industrial Geophysics, Nr 26) Moscow, Gostoptekhizdat, 1958. 87 p. (Series: Obzory proizvodstvennym opytom) 4,000 copies printed.

Ed.: M.K. Polubinov; Exec. Ed.: Ye.G. Pershina; Tech. Ed.: A.S. Polosina.

PURPOSE: This booklet is intended for exploration geophysicists and geologists.

COVERAGE: This collection of articles includes discussions of improvements in seismic exploration techniques and interpretations of data obtained by the refracted and reflected waves method of seismic exploration. Individual articles discuss: the construction of gravimetric maps, improvements in industrial borehole equipment, the standardization of radioactive electrologging equipment, and methods for computing labor productivity in geophysical operations. A nomogram to facilitate the interpretation of data and conditions when using gamma logging of boreholes is described. References accompany each article.

Card 1/3

AVAILABLE: Library of Congress

Card 3/3

MM/mg
12-31-59

TISHCHENKO, D.; KISLITSYN, A.

Sulfomethylation of phenols. Zhur.prikl.khim. 34 no.7:1613-1616 Jl '61. (MIRA 14:7)

(Phenols) (Sulfomethylation)

ZARUBIN, M.; TISHCHENKO, D.

Hypothesis for the alkaline condensation of lignin. Zhur. prikl. khim. 34 no.1:194-199 Ja '61. (MIRA 14:1)
(Ligin)

CHIRKIN, G.; TISHCHENKO, D.

Redox reactions in alkali cooking of wood. Zhur.prikl.khim. 35 no.1: 153-159 Ja '62. (MIRA 15:1)

1. Lesotekhnicheskaya akademiya imeni S.M.Kirova.
(Oxidation-reduction reactions) (Woodpulp)

ZARUBIN, M.; TISHCHENKO, D.

Alkaline hydrolysis of Scholler's lignin resulting in the formation of low molecular weight substances. Zhur. prikl. khim. 33 no.11:2576-2581 N '60. (MIRA 14:4)
(Lignin)

KISLITSYN, A.; TISHCHENKO, D.

Products of cleavage of phenol acids of wood-tar pitch by sodium in liquid ammonia. Zhur.prikl.khim. 35 no.3:648-656 Mr '62. (MIRA 15:4)

1. Kafedra organicheskoy khimii Lesotekhnicheskoy akademii.
(Phenols) (Acids, Organic) (Wood tar)

TISHCHENKO, D.; FLEYSHER, S.

Organic viscosity-depressing agents for drilling muds. Zhur. prikl.khim. 35 n.3:638-647 Mr '62. (MIRA 15:4)
(Drilling fluids) (Viscosity)

AUTHORS: Kislitsyn, A., Tishchenko, D.

SOV/80-32-2-22/56

TITLE: Methods for Simplifying High-Molecular Substances of Pitch (Sposoby uproshcheniya vysokomolekulyarnykh veshchestv peka)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol XXXII, Nr 2, pp 391-395 (USSR)

ABSTRACT: The resins obtained in the thermolysis of wood contain from 30 - 70% pitch. The composition of pitch is investigated here in order to find new fields of application for it. The tested samples contained 24.8% neutral substances, 21.4% phenols, and 42.7% acids. After treatment with metallic sodium the phenol-acids were decomposed to substances soluble in ether with a molecular weight of 300 - 500 (34%) and to substances soluble in an alcohol-acetone mixture with a molecular weight of about 800 (60%). The phenol-acids are linked by a carbon-carbon bond.

There are 9 references, 7 of which are Soviet, 1 Canadian, and 1 German.

Card 1/2

Methods for Simplifying High-Molecular Substances of Fibers SOV/ -2-2-24/36

ASSOCIATION: Laboratoriya organicheskoy khimii Lesotekhnicheskoy Akademii, Leningrad (Laboratory of Organic Chemistry of the Forest Technology Academy, Leningrad)

SUBMITTED: June 27, 1957

Card 2/2

AUTHORS: Zarubin, M., Tishchenko, D. SOV/80-32-2-29/56

TITLE: Alkaline Hydrolysis of Scholler Lignin With the Production of Low-Molecular Substances (Shchelochnoy gidroliz lignina Shollera s polucheniyem nizkomolekulyarnykh veshchestv)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol XXXII, Nr 2, pp 395-399 (USSR)

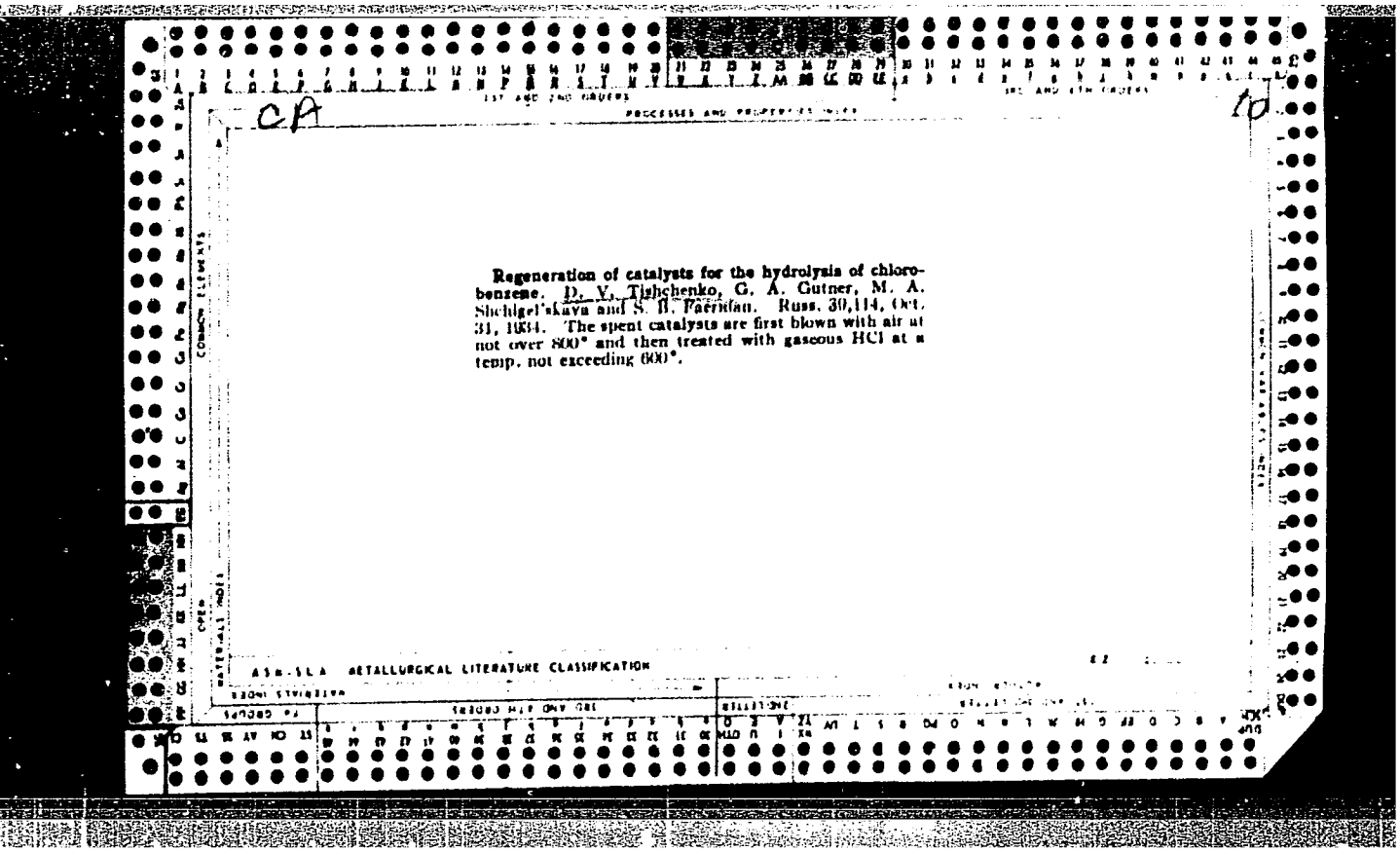
ABSTRACT: Heating of technical ligninsin alkaline solution produces low-molecular compounds of phenol type. Their molecular weight is 400 or less. The ether-soluble compounds contain 75% C and 6.3% H. These substances exceed 50% of the lignin weight. There is 1 table and 14 references, 6 of which are Soviet, 4 Swedish, 2 German, 1 Canadian, and 1 Finnish.

SUBMITTED: August 29, 1957

Card 1/1

TISHCHENKO, Dmitriy Iosifovich; SHCHEPROV, S.V., kandidat istoricheskikh nauk, redaktor; USHOMIRSKIY, M.Ya., redaktor izdatel'stva; SHLYK, M.D., tekhnicheskiy redaktor

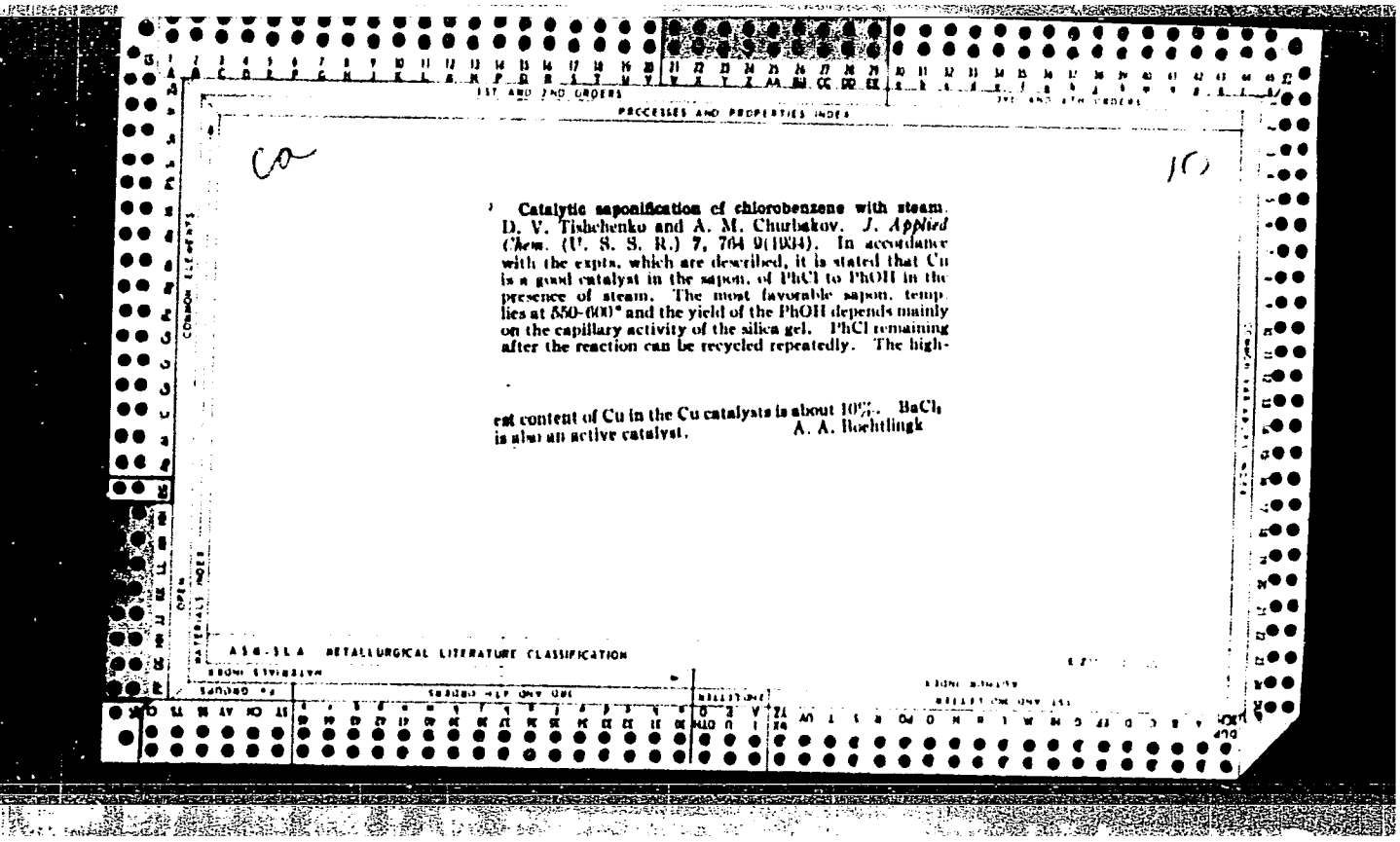
[Appearance of the modern industrial proletariat in Russia. First steps of the workers' movement. Lecture material for the course "History of the Communist Party of the Soviet Union."] Poiavlenie sovremennogo promyshlennogo proletariata v Rossii. Pervye shagi rabochego dvizheniia. Materialy k lektsii po kursu "Istoriia KPSS." Moskva, Gos. izd-vo "Sovetskaia nauka," 1957. 30 p. (MLRA 10:9)
(Labor and laboring classes)



CA

10

Regeneration of catalysts for the hydrolysis of chlorobenzene. D. V. Tishchenko, G. A. Gutner, M. A. Shchigel'skaya and S. B. Faerman. Russ. 30,114, Oct. 31, 1934. The spent catalysts are first blown with air at not over 800° and then treated with gaseous HCl at a temp. not exceeding 600°.



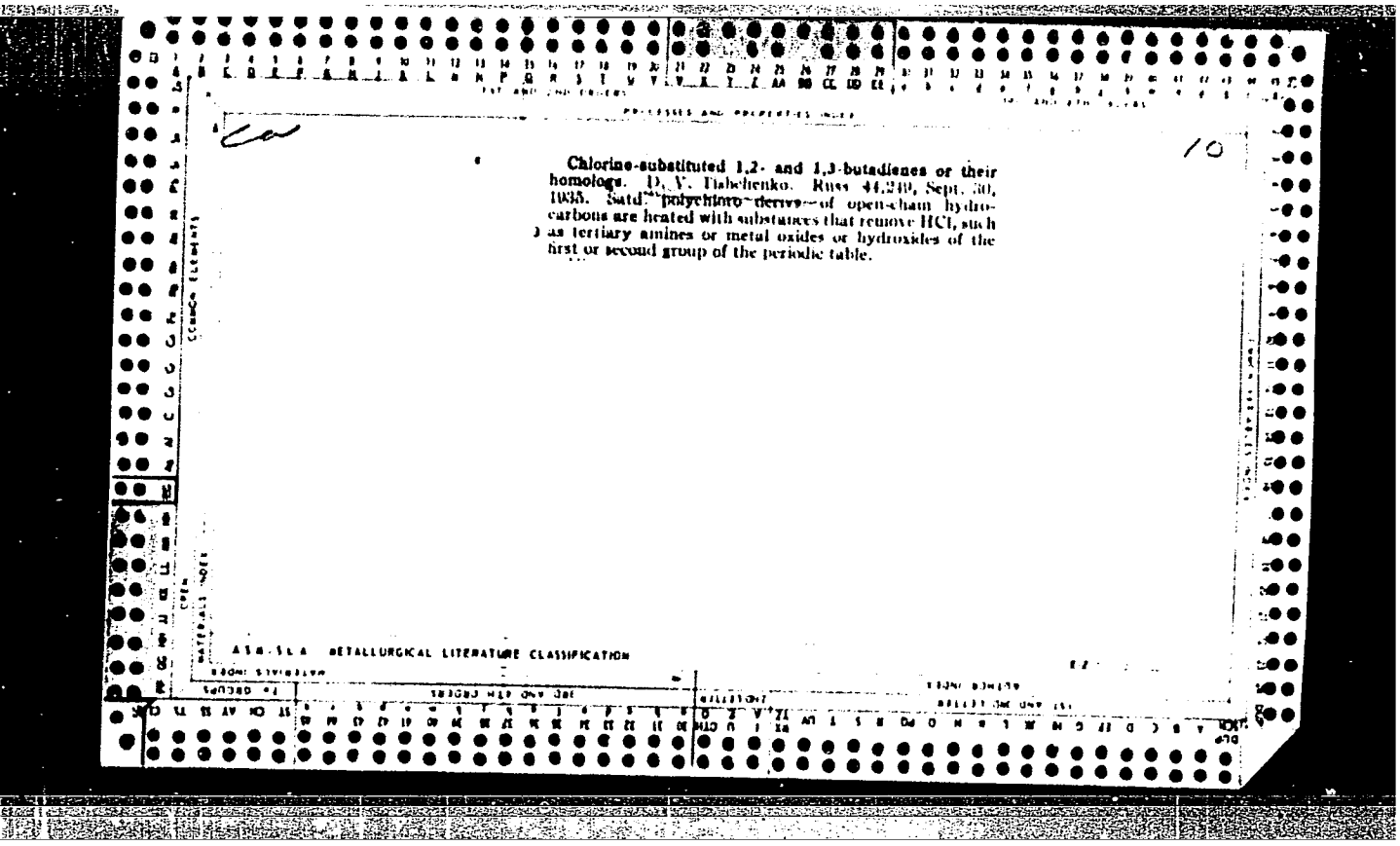
PROCESSES AND PROPERTIES INDEX

Co

10

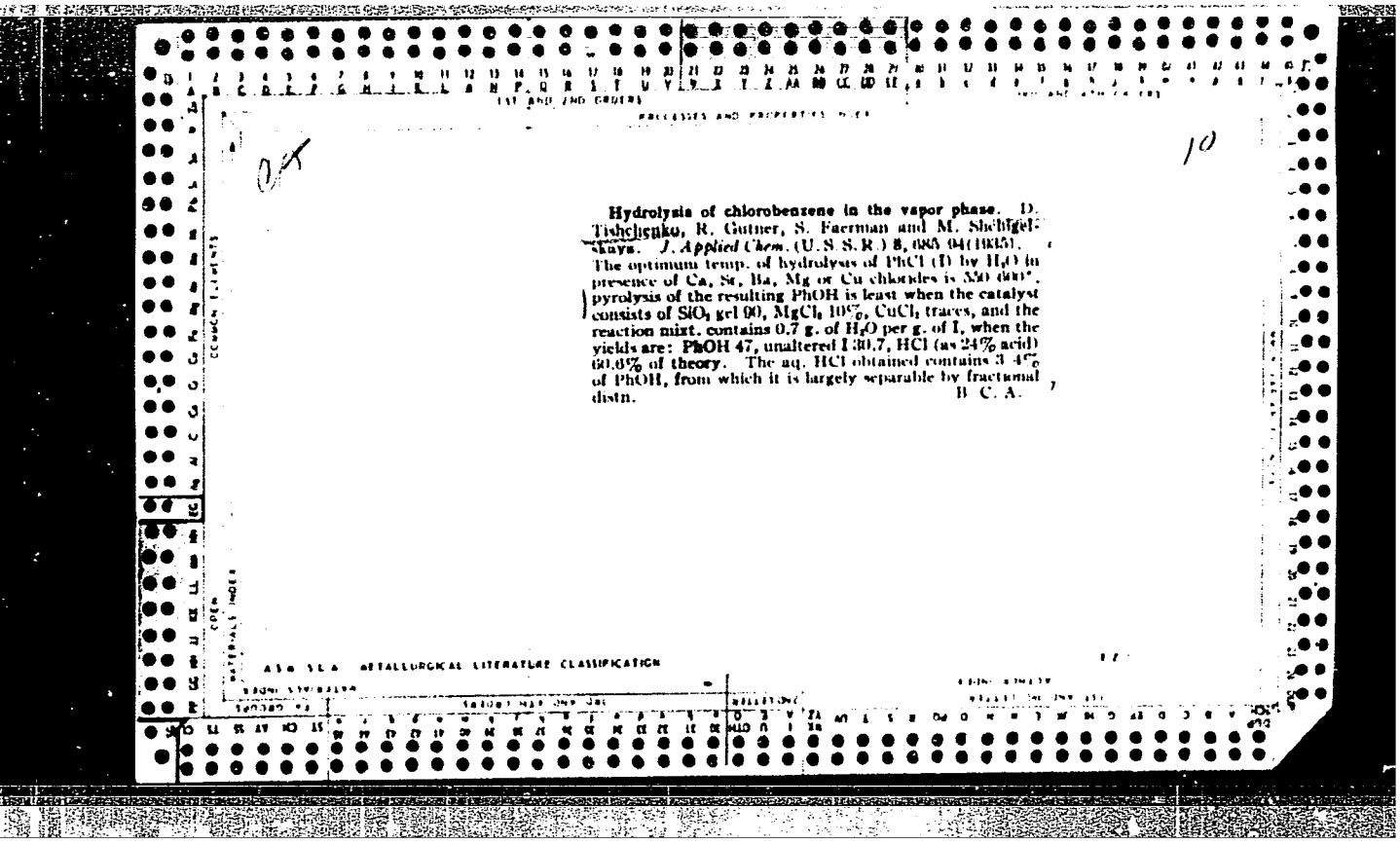
Catalytic saponification of chlorobenzene with steam. D. V. Tishchenko and A. M. Churbakov. *J. Applied Chem.* (U. S. S. R.) 7, 764-9(1934). In accordance with the expts. which are described, it is stated that Cu is a good catalyst in the sapon. of PhCl to PhOH in the presence of steam. The most favorable sapon. temp. lies at 550-600° and the yield of the PhOH depends mainly on the capillary activity of the silica gel. PhCl remaining after the reaction can be recycled repeatedly. The highest content of Cu in the Cu catalysts is about 10%. $BaCl_2$ is also an active catalyst. A. A. Boehtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



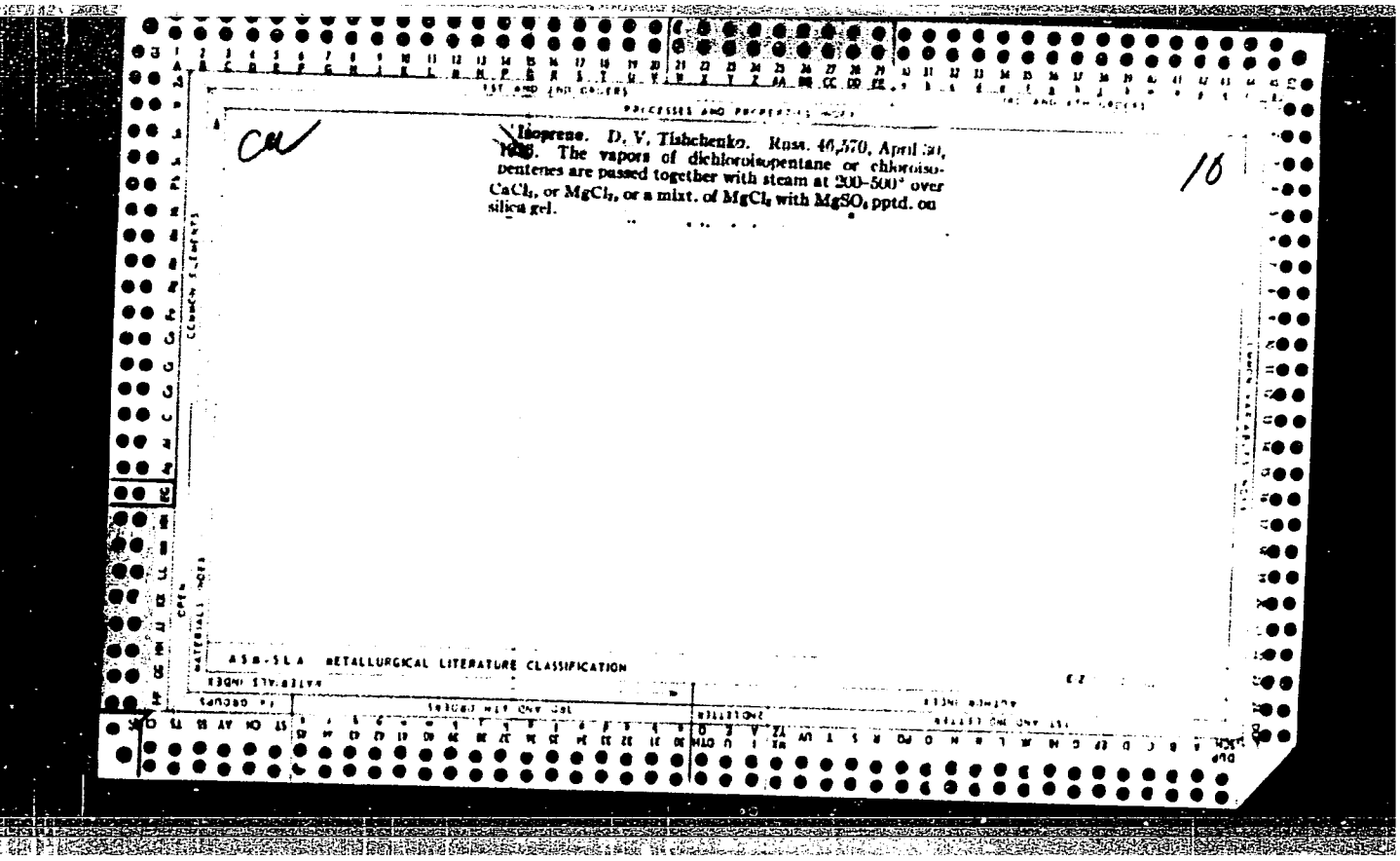
Chlorine-substituted 1,2- and 1,3-butadienes or their homologs. D. V. Tishchenko. Russ 44,240, Sept. 30, 1935. Satd. polychloro derivs. of open-chain hydrocarbons are heated with substances that remove HCl, such as tertiary amines or metal oxides or hydroxides of the first or second group of the periodic table.

A58-51A METALLURGICAL LITERATURE CLASSIFICATION



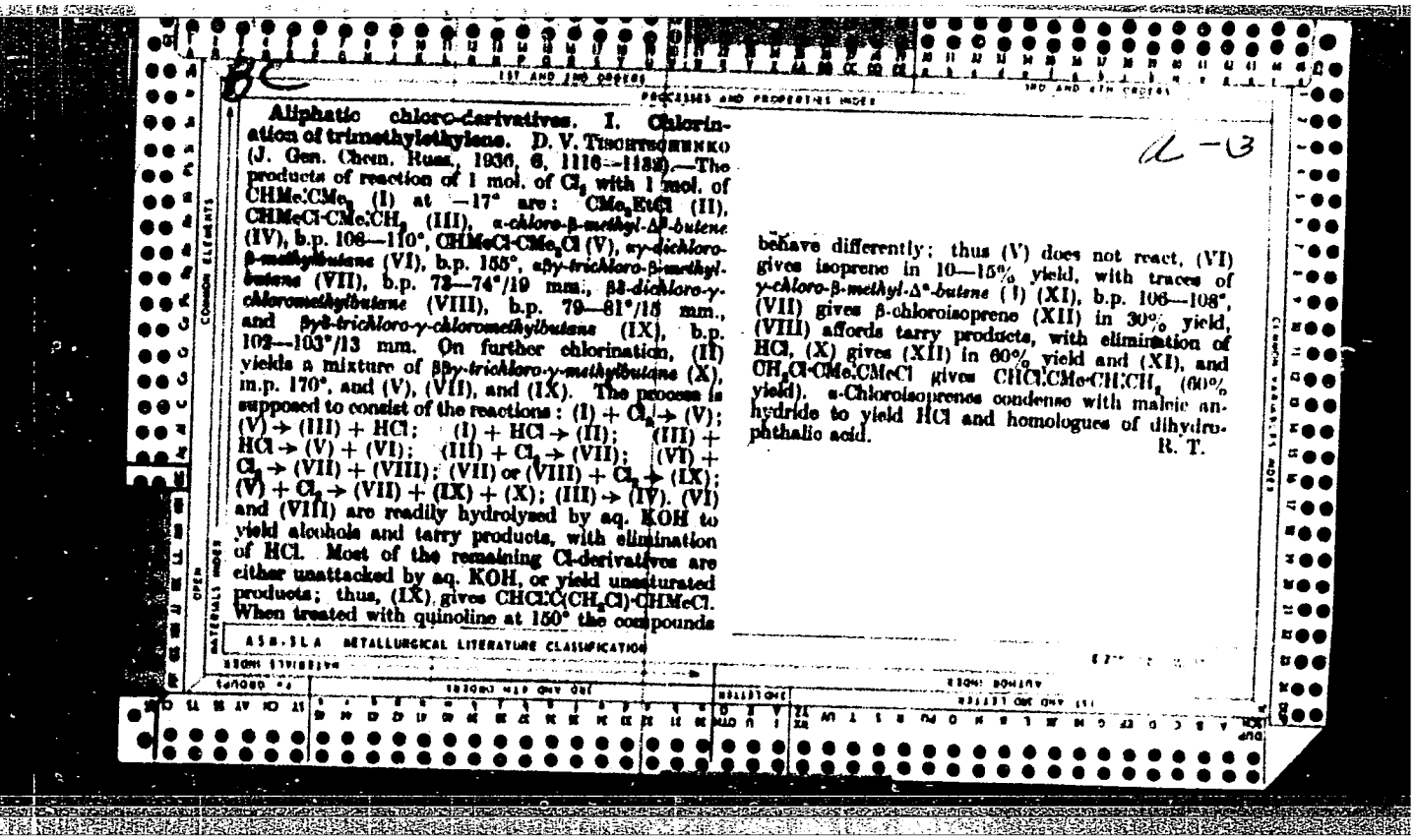
Hydrolysis of chlorobenzene in the vapor phase. D. Tishchenko, R. Gutner, S. Faerman and M. Shchigel'skaya. *J. Applied Chem.* (U.S.S.R.) 8, 085-94(1935). The optimum temp. of hydrolysis of PhCl (I) by H_2O in presence of Ca, Sr, Ba, Mg or Cu chlorides is 550-600°; pyrolysis of the resulting PhOH is least when the catalyst consists of SiO_2 gel 90, $MgCl_2$ 10%, $CuCl_2$ traces, and the reaction mixt. contains 0.7 g. of H_2O per g. of I, when the yields are: PhOH 47, unaltered I 30.7, HCl (as 24% acid) 60.8% of theory. The aq. HCl obtained contains 3.4% of PhOH, from which it is largely separable by fractional distn.

B. C. A.



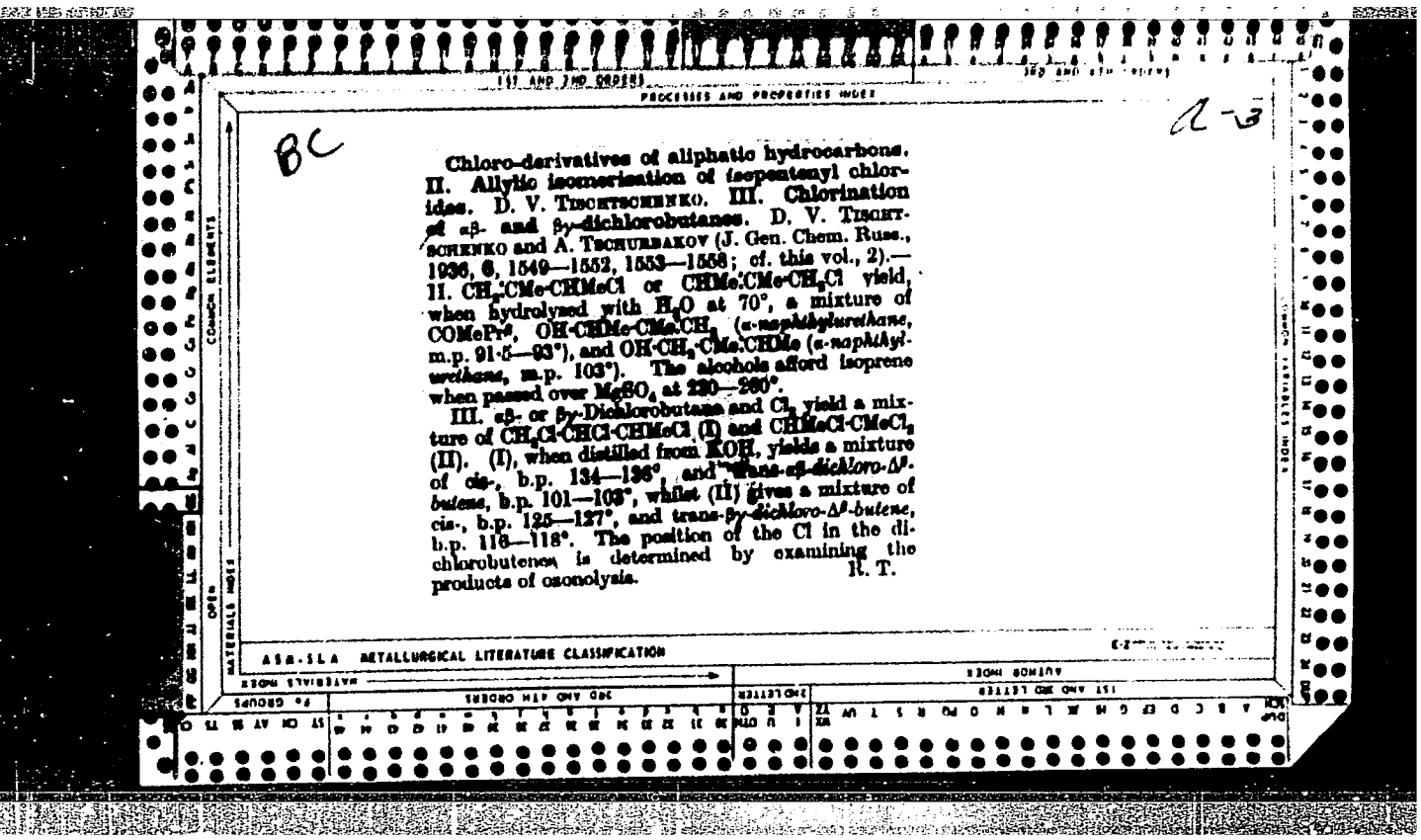
Isoprene. D. V. Tishchenko. Russ. 46,570, April 30, 1936. The vapors of dichloroisopentane or chloroisopentenes are passed together with steam at 300–500° over $CaCl_2$, or $MgCl_2$, or a mixt. of $MgCl_2$ with $MgSO_4$ pptd. on silica gel.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Aliphatic chloro-derivatives. I. Chlorination of trimethylethylene. D. V. TSCHITSCHENKO (J. Gen. Chem. Russ., 1936, 6, 1116—1132).—The products of reaction of 1 mol. of Cl_2 with 1 mol. of $CHMe{:}CMe_2$ (I) at −17° are: CMe_2EtCl (II), $CHMeCl{\cdot}CMe{:}CH_2$ (III), *α-chloro-β-methyl-Δ²-butene* (IV), b.p. 108—110°, $CHMeCl{\cdot}CMe_2Cl$ (V), *αγ-dichloro-β-methylbutane* (VI), b.p. 155°, *αβγ-trichloro-β-methylbutane* (VII), b.p. 73—74°/19 mm., *βδ-dichloro-γ-chloromethylbutane* (VIII), b.p. 79—81°/15 mm., and *βγδ-trichloro-γ-chloromethylbutane* (IX), b.p. 102—103°/13 mm. On further chlorination, (II) yields a mixture of *ββγ-trichloro-γ-methylbutane* (X), m.p. 170°, and (V), (VII), and (IX). The process is supposed to consist of the reactions: (I) + Cl_2 → (V); (V) → (III) + HCl; (I) + HCl → (II); (III) + HCl → (V) + (VI); (III) + Cl_2 → (VII); (VI) + Cl_2 → (VII) + (VIII); (VII) or (VIII) + Cl_2 → (IX); (V) + Cl_2 → (VII) + (IX) + (X); (III) → (IV). (VI) and (VIII) are readily hydrolysed by aq. KOH to yield alcohols and tarry products, with elimination of HCl. Most of the remaining Cl-derivatives are either unattacked by aq. KOH, or yield unsaturated products; thus, (IX) gives $CHCl{:}C(CH_2Cl){\cdot}CHMeCl$. When treated with quinoline at 150° the compounds behave differently; thus (V) does not react, (VI) gives isoprene in 10—15% yield, with traces of *γ-chloro-β-methyl-Δ²-butene* (?) (XI), b.p. 106—108°, (VII) gives β-chloroisoprene (XII) in 30% yield, (VIII) affords tarry products, with elimination of HCl, (X) gives (XII) in 60% yield and (XI), and $CH_2Cl{\cdot}CMe{:}CMeCl$ gives $CHCl{:}CMe{\cdot}CH{:}CH_2$ (60% yield). α-Chloroisoprene condenses with maleic anhydride to yield HCl and homologues of dihydrophthalic acid.

R. T.



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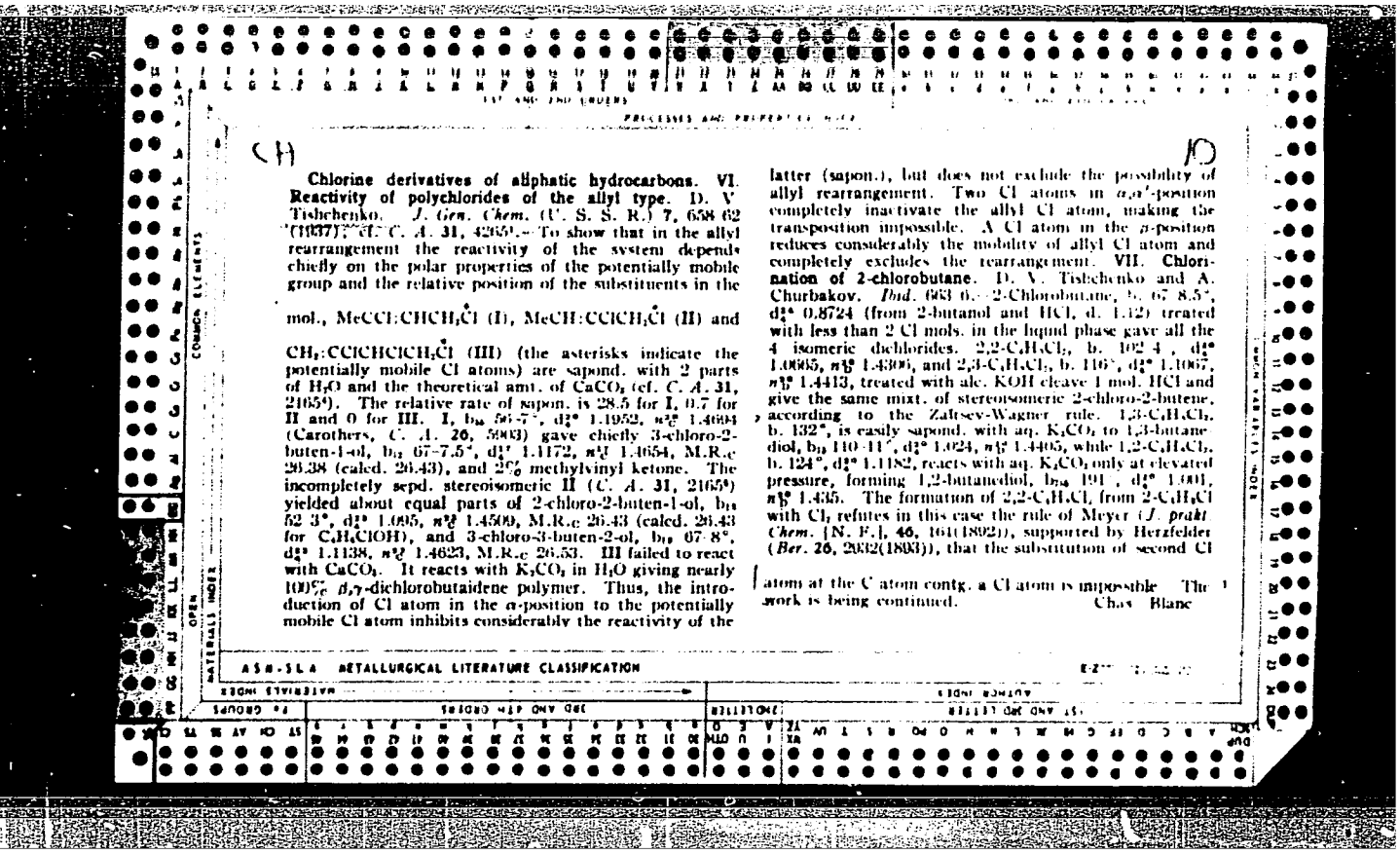
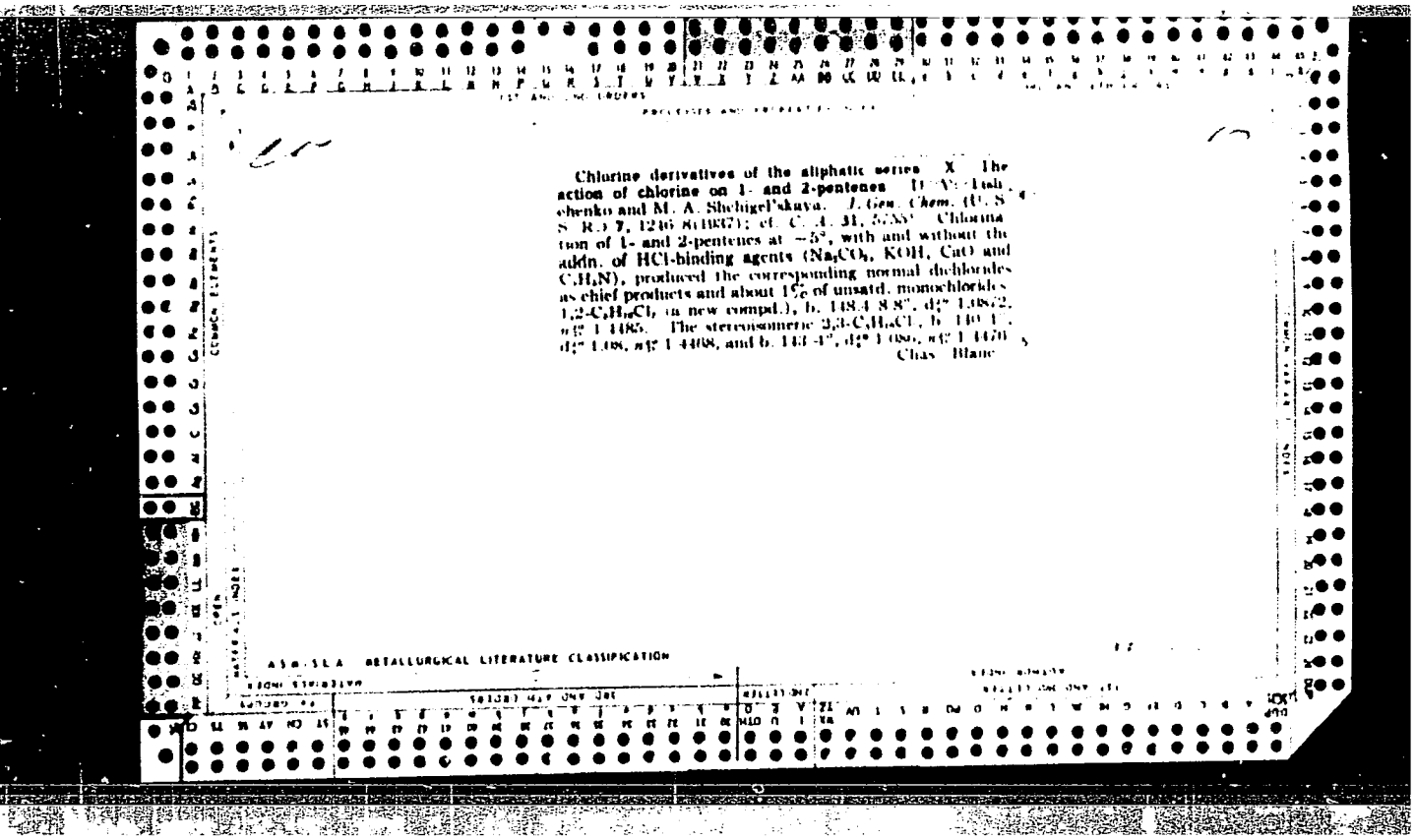
Chloro-derivatives of aliphatic hydrocarbons. II. Allylic isomerisation of *isopentenyl* chlorides. D. V. TISCHTSCHENKO. III. Chlorination of αβ- and βγ-dichlorobutanes. D. V. TISCHTSCHENKO and A. TSCHURBAKOV (J. Gen. Chem. Russ., 1936, **6**, 1549—1552, 1553—1558; cf. this vol., 2).—II. CH_2:CMe·CHMeCl or CHMe:CMe·CH_2Cl yield, when hydrolysed with H_2O at 70°, a mixture of COMePr$^\beta$, OH·CHMe·CMe:CH_2 (*α-naphthylurethane*, m.p. 91·5—93°), and OH·CH_2·CMe:CHMe (*α-naphthylurethane*, m.p. 103°). The alcohols afford isoprene when passed over $MgSO_4$ at 280—290°.

III. αβ- or βγ-Dichlorobutane and Cl_2 yield a mixture of CH_2Cl·CHCl·CHMeCl (I) and CHMeCl·CMeCl_2 (II). (I), when distilled from KOH, yields a mixture of *cis-*, b.p. 134—136°, and *trans-αβ-dichloro-Δ$^\beta$-butene*, b.p. 101—103°, whilst (II) gives a mixture of *cis-*, b.p. 125—127°, and *trans-βγ-dichloro-Δ$^\beta$-butene*, b.p. 116—118°. The position of the Cl in the dichlorobutenes is determined by examining the products of ozonolysis. R. T.

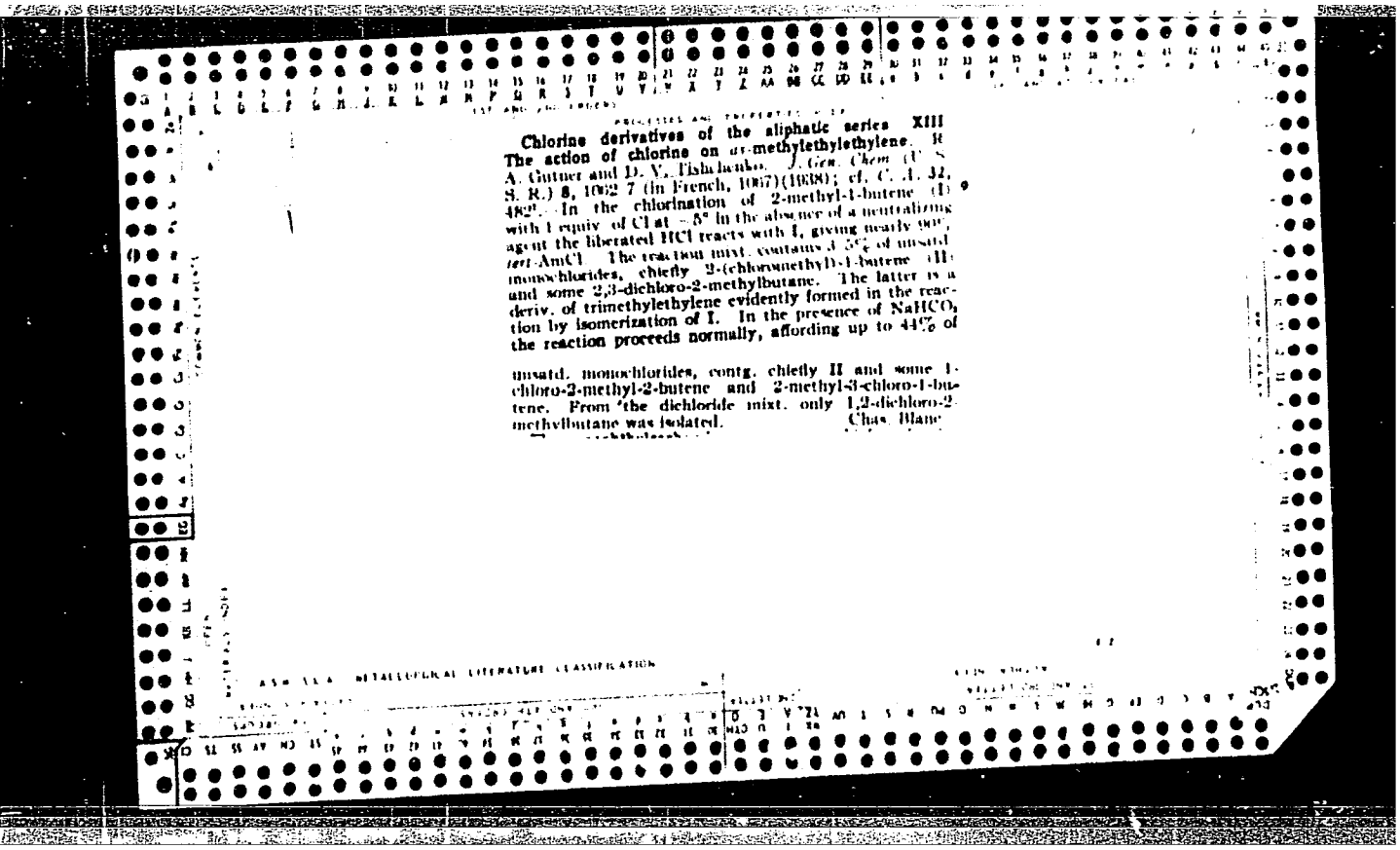


Chlorine derivatives of aliphatic hydrocarbons. VI. Reactivity of polychlorides of the allyl type. D. V. Tishchenko. *J. Gen. Chem.* (U. S. S. R.) **7**, 658-62 (1937); cf. *C. A.* **31**, 4265⁹.—To show that in the allyl rearrangement the reactivity of the system depends chiefly on the polar properties of the potentially mobile group and the relative position of the substituents in the mol., MeCCl:CHCH$_2$Cl (I), MeCH:CClCH$_2$Cl (II) and CH$_2$:CClCHClCH$_2$Cl (III) (the asterisks indicate the potentially mobile Cl atoms) are sapond. with 2 parts of H_2O and the theoretical amt. of $CaCO_3$ (cf. *C. A.* **31**, 2165⁹). The relative rate of sapon. is 28.5 for I, 0.7 for II and 0 for III. I, b_{34} 56-7°, d_4^{15} 1.1952, n_D^{15} 1.4684 (Carothers, *C. A.* **26**, 5903) gave chiefly 3-chloro-2-buten-1-ol, b_{12} 67-7.5°, d_4^{15} 1.1172, n_D^{15} 1.4654, M.R$_D$ 26.38 (calcd. 26.43), and 2% methylvinyl ketone. The incompletely sepd. stereoisomeric II (*C. A.* **31**, 2165⁹) yielded about equal parts of 2-chloro-2-buten-1-ol, b_{11} 52 3°, d_4^{15} 1.095, n_D^{15} 1.4509, M.R$_D$ 26.43 (calcd. 26.43 for C_4H_7ClOH), and 3-chloro-3-buten-2-ol, b_{11} 67-8°, d_4^{15} 1.1138, n_D^{15} 1.4623, M.R$_D$ 26.53. III failed to react with $CaCO_3$. It reacts with K_2CO_3 in H_2O giving nearly 100% β,γ-dichlorobutaidene polymer. Thus, the introduction of Cl atom in the α-position to the potentially mobile Cl atom inhibits considerably the reactivity of the latter (sapon.), but does not exclude the possibility of allyl rearrangement. Two Cl atoms in α,α'-position completely inactivate the allyl Cl atom, making the transposition impossible. A Cl atom in the β-position reduces considerably the mobility of allyl Cl atom and completely excludes the rearrangement. **VII. Chlorination of 2-chlorobutane.** D. V. Tishchenko and A. Churbakov. *Ibid.* 663 6.—2-Chlorobutane, b_{760} 67 8.5°, d_4^{15} 0.8724 (from 2-butanol and HCl, d. 1.12) treated with less than 2 Cl mols. in the liquid phase gave all the 4 isomeric dichlorides. 2,2-$C_4H_8Cl_2$, b. 102 4°, d_4^{15} 1.0995, n_D^{15} 1.4396, and 2,3-$C_4H_8Cl_2$, b. 116°, d_4^{15} 1.1067, n_D^{15} 1.4413, treated with alc. KOH cleave 1 mol. HCl and give the same mixt. of stereoisomeric 2-chloro-2-butene, according to the Zaitsev-Wagner rule. 1,3-$C_4H_8Cl_2$, b. 132°, is easily sapond. with aq. K_2CO_3 to 1,3-butanediol, b_{11} 110-11°, d_4^{15} 1.024, n_D^{15} 1.4405, while 1,2-$C_4H_8Cl_2$, b. 124°, d_4^{15} 1.1182, reacts with aq. K_2CO_3 only at elevated pressure, forming 1,2-butanediol, b_{34} 191°, d_4^{15} 1.001, n_D^{15} 1.435. The formation of 2,2-$C_4H_8Cl_2$ from 2-C_4H_9Cl with Cl_2 refutes in this case the rule of Meyer (*J. prakt. Chem.* [N. F.], **46**, 161(1892)), supported by Herzfelder (*Ber.* **26**, 2932(1893)), that the substitution of second Cl atom at the C atom contg. a Cl atom is impossible. The work is being continued. Chas. Blanc



Chlorine derivatives of the aliphatic series X. The action of chlorine on 1- and 2-pentenes. I. V. Tishchenko and M. A. Shchigel'skaya. *J. Gen. Chem.* (U. S. S. R.) 7, 1246-8(1937); cf. C. A. 31, 5755⁹. Chlorination of 1- and 2-pentenes at −5°, with and without the addn. of HCl-binding agents (Na_2CO_3, KOH, CaO and C_5H_5N), produced the corresponding normal dichlorides as chief products and about 15% of unsatd. monochlorides 1,2-$C_5H_{10}Cl_2$ (a new compd.), b. 148.4-8.8°, d_4^{20} 1.0852, n_D^{20} 1.4485. The stereoisomeric 2,3-$C_5H_{10}Cl_2$, b. 140.1°, d_4^{20} 1.08, n_D^{20} 1.4408, and b. 143.4°, d_4^{20} 1.080, n_D^{20} 1.4470.

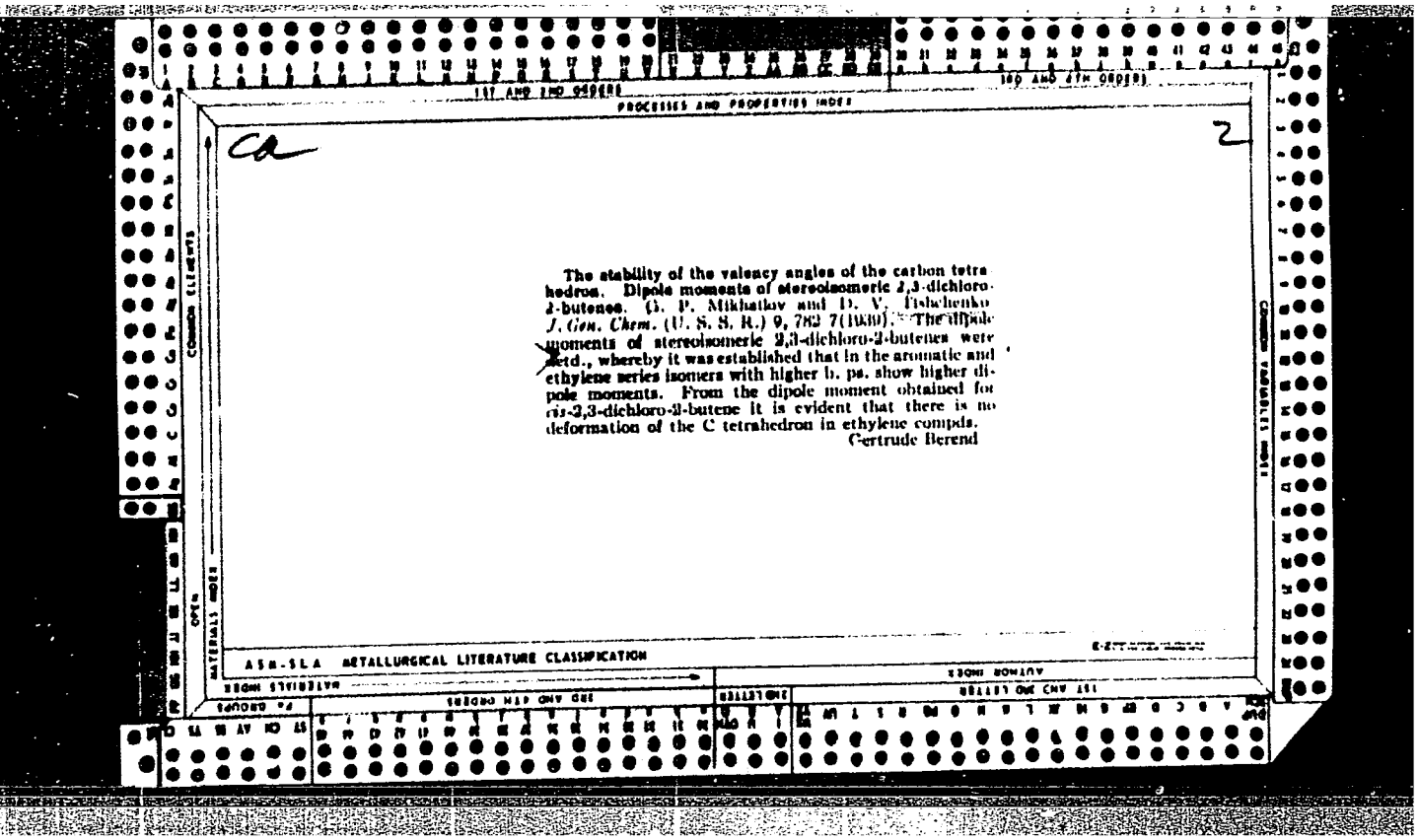
Chas. Blanc



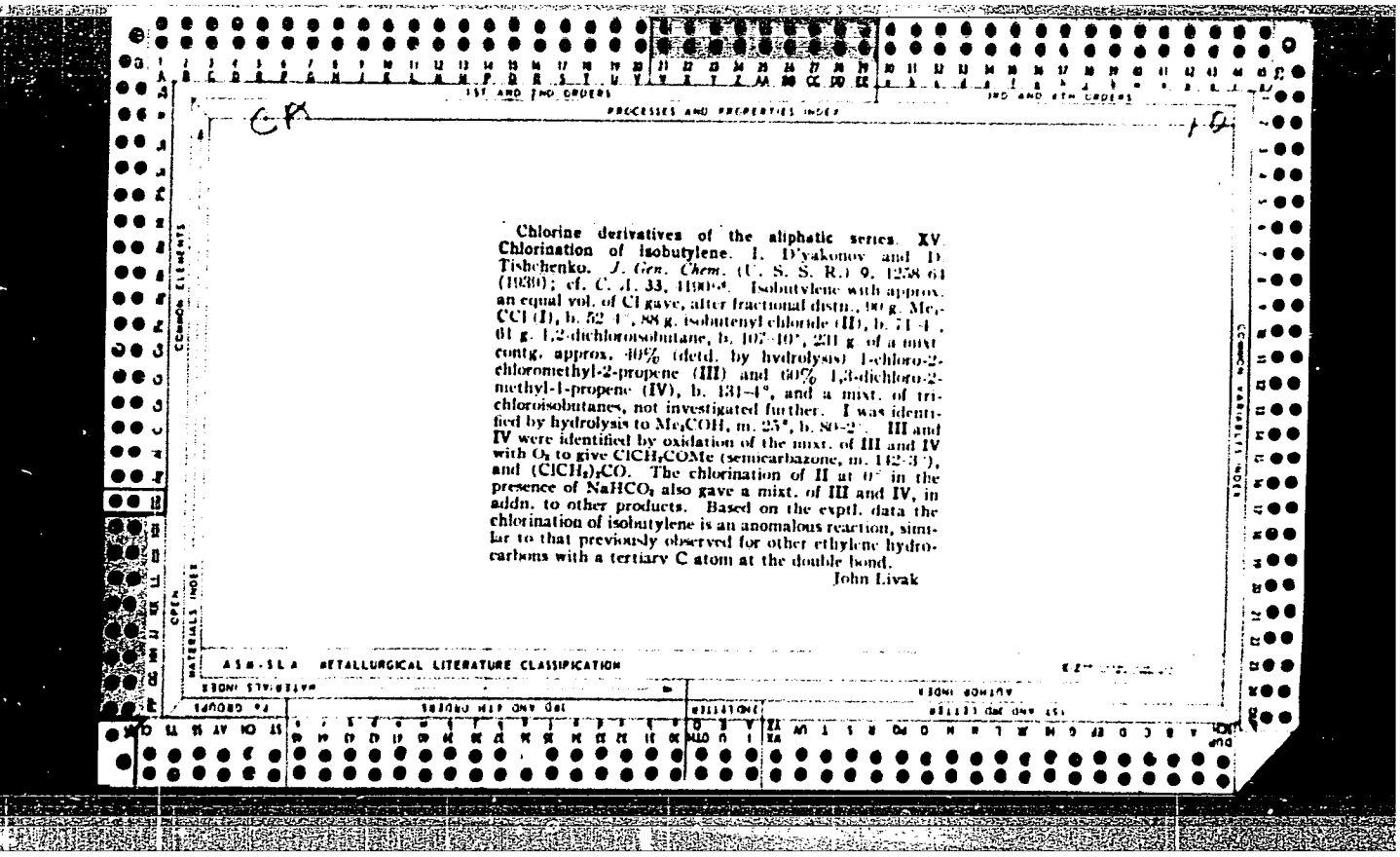
Chlorine derivatives of the aliphatic series XIII The action of chlorine on *as*-**methylethylethylene.** R A. Gutner and D. V. Fishlianko. *J. Gen. Chem.* (U. S. S. R.) **8**, 1092-7 (in French, 1067)(1938); cf. C. A. 32, 482⁹. In the chlorination of 2-methyl-1-butene (I) with 1 equiv. of Cl at −5° in the absence of a neutralizing agent the liberated HCl reacts with I, giving nearly 90% *tert*-AmCl. The reaction mixt. contains 3.5% of unsatd. monochlorides, chiefly 2-(chloromethyl)-1-butene (II) and some 2,3-dichloro-2-methylbutane. The latter is a deriv. of trimethylethylene evidently formed in the reaction by isomerization of I. In the presence of $NaHCO_3$ the reaction proceeds normally, affording up to 44% of unsatd. monochlorides, contg. chiefly II and some 1-chloro-2-methyl-2-butene and 2-methyl-3-chloro-1-butene. From the dichloride mixt. only 1,2-dichloro-2-methylbutane was isolated. Chas. Blanc

Chlorine derivatives of the aliphatic series. XIV. The additive capacity of a double bond at the quaternary carbon. D. V. Tishchenko. *J. Gen. Chem.* (U. S. S. R.) **8**, 1232-45 (in French, 1240) (1938); *cf. C. A.* **32**, 4827.—The ethylene hydrocarbons and monochlorides with a quaternary C atom at the double bond were treated, with stirring, with approx. 1 mol. of Cl at 0° in the presence of 1.5 mols. $NaHCO_3$. $Me_2C:CMe_2$ gave a mixt. of 90% $Me(CH_2)CCl:CMe_2$, b_{760} 111-12°, d_4^{20} 0.8895, n_D^{20} 1.4315, and $MeCH_2Cl:CMe_2$. $Et_2C:CEt_2$ gave 60% $EtMe(CH_2)CCl:CEt_2$, b_{15} 70-2°, d_4^{20} 0.897, n_D^{20} 1.4551 and 40% $(EtCCl)_2$, b_{20} 101-3°, d_4^{20} 1.022, n_D^{20} 1.4748. $Me_2C:CHCl$ gave 68% $Me(CH_2)CCl:CHCl_2$, b_{760} 108-12°, b_{100} 49-50°, d_4^{20} 1.1360, n_D^{20} 1.4521, M. R.$_D$ 29.60, and 32% $Me_2ClCHCHCl_2$, b_{760} 115-6°, b_{15} 46-7°, d_4^{20} 1.2588. $Me_2C:CClMe$ gave 80% $Me(CH_2)CCl:CHCl_2Me$, b_{760} 55-7°, b_{15} 124-6°, d_4^{20} 1.085, n_D^{20} 1.4513, M. R.$_D$ 34.52 and 10% $Me_2CCl-CCl_2Me$, m. 182-3°. The dichloride on boiling is isomerized into *2-methyl-3,3-dichloro-1-butene*, b. 151-3°, d_4^{20} 1.1270, n_D^{20} 1.4737. $MeCHClCMe:CH_2$ gave 65% *2-chloromethyl-3-chloro-1-butene*, b. 39-40°, contg. about 25% *1,3-dichloro-2-methyl-2-butene*, and 30% $MeCHCl-CMeCHCH_2Cl$, b_{15} 65-5.5°, d_4^{20} 1.2482, n_D^{20} 1.4753, M. R.$_D$ 39.94. $MeCCl:CHMe$ gave 55% $CH_2:CClCHClMe$, b_{760} 111-13°, d_4^{20} 1.1319, n_D^{20} 1.4561, M. R.$_D$ 29.03 and 45% $MeCCl_2CH:CHMe$, b. 143-5°, d_4^{20} 1.203, n_D^{20} 1.4637, M. R.$_D$ 35.20. $CH_2:C(CH_2Cl)CHClMe$, contg. about 25% 1,4-dichloro-2-butene, gave about 6% $C_4H_6Cl_2$, b_{30} 77-84°, d_4^{20} 1.33, n_D^{20} 1.4975 and 90% $(CH_2ClCCl:(CH_2Cl)CHClMe$, b. 102-4°, d_4^{20} 1.4133, n_D^{20} 1.5033. The trichloride is probably *1,3-dichloro-2-chloromethyl-1-butene* (cf. C. A. 31, 1003°). $CH_2:CClCH_2CHClMe$ gave 100% $ClH_2CCCl_2CHClMe$, b_{15} 68-9.5°, d_4^{20} 1.4276, n_D^{20} 1.4893. Thus the results show again (cf. C. A. 31, 1003°) that the polarization of the double bond at the quaternary C atom produces anomalous reaction with Cl with the formation of unsatd. monochlorides of ethylenes as the chief reaction products and a little dichloride formed by the addn. of 2 Cl atoms at the double bond. With the increasing no. of Cl atoms in the alkyls attached to the quaternary C at the double bond the products of Cl addn. (dichlorides) increase and the products of Cl substitution and isomerization (unsatd. monochlorides) decrease (cf. Ingold, C. A. 29, 1055°, I. and Smith, C. A. 26, 691). **XV. The action of quinoline on polyhalides of dimethylenechloroprene.** *Ibid.* 1426-9.—1,4,2-Trichlorocyclohexane, b_{15} 96-7°, d_4^{20} 1.3288, n_D^{20} 1.5004, M. R.$_D$ 42.16, was obtained in 40% yield from 1-chloro-1-cyclohexene and 1 mol. Cl at 0°. The trichloride reacts with 1 mol. quinoline at 210-60°, giving *1,2-dichloro-1-cyclohexene* (I), b_{15} 76.7-7°, m. 26-7°. The hydrolysis of the ozonide of I gave adipic acid. The cleavage of 2 mols. HCl from the trichloride with 2 mols. quinoline forms not the expected chloroallene deriv., according to the Markovnikov law, but gives by transposition of the double bond *2-chloro-1,3-cyclohexadiene*, b_{760} 141-2°, d_4^{20} 1.0807, n_D^{20} 1.5055, M. R.$_D$ 31.70. After 15 months the diene compd. was partially polymerized to a nonmeltable rubber product.

Chas. Blanc



The stability of the valency angles of the carbon tetrahedron. Dipole moments of stereoisomeric 2,3-dichloro-2-butenes. G. P. Mikhailov and D. V. Tishchenko *J. Gen. Chem.* (U. S. S. R.) 9, 782-7(1939). The dipole moments of stereoisomeric 2,3-dichloro-2-butenes were detd., whereby it was established that in the aromatic and ethylene series isomers with higher b. ps. show higher dipole moments. From the dipole moment obtained for cis-2,3-dichloro-2-butene it is evident that there is no deformation of the C tetrahedron in ethylene compds.
Gertrude Berend



PROCESSES AND PROPERTIES INDEX

Chlorine derivatives of the aliphatic series. XV. Chlorination of isobutylene. I. D'yakonov and D. Tishchenko. *J. Gen. Chem.* (U. S. S. R.) 9, 1258-64 (1939); cf. C. A. 33, 1990[9]. Isobutylene with approx. an equal vol. of Cl gave, after fractional distn., 90 g. Me_2CCl_2 (I), b. 52-4°, 88 g. isobutenyl chloride (II), b. 71-4°, 61 g. 1,2-dichloroisobutane, b. 107-10°, 231 g. of a mixt. contg. approx. 40% (detd. by hydrolysis) 1-chloro-2-chloromethyl-2-propene (III) and 60% 1,3-dichloro-2-methyl-1-propene (IV), b. 131-4°, and a mixt. of trichloroisobutanes, not investigated further. I was identified by hydrolysis to Me_2COH, m. 25°, b. 80-2°. III and IV were identified by oxidation of the mixt. of III and IV with O_3 to give $ClCH_2COMe$ (semicarbazone, m. 142-3°), and $(ClCH_2)_2CO$. The chlorination of II at 0° in the presence of $NaHCO_3$ also gave a mixt. of III and IV, in addn. to other products. Based on the exptl. data the chlorination of isobutylene is an anomalous reaction, similar to that previously observed for other ethylene hydrocarbons with a tertiary C atom at the double bond.

John Livak

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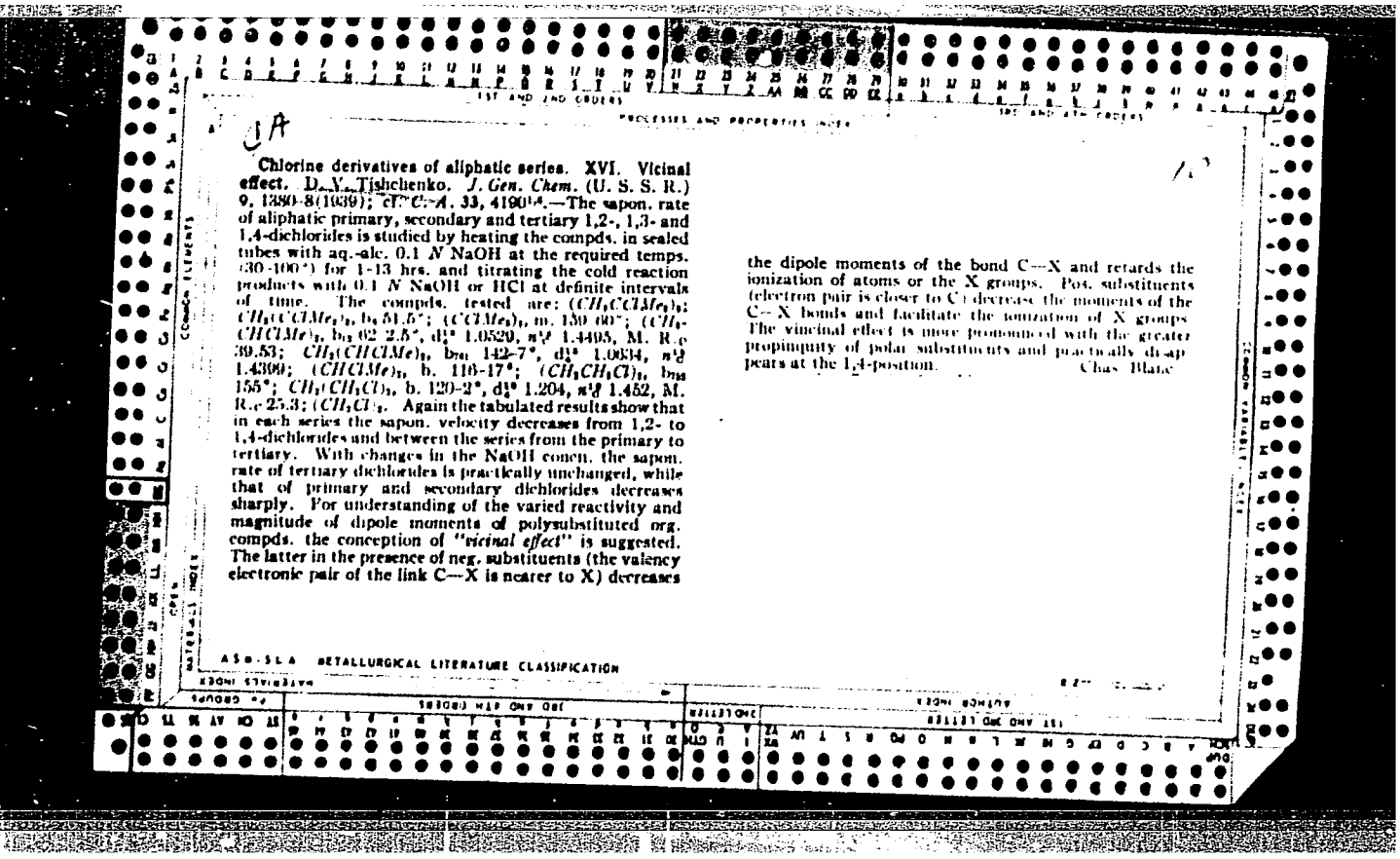

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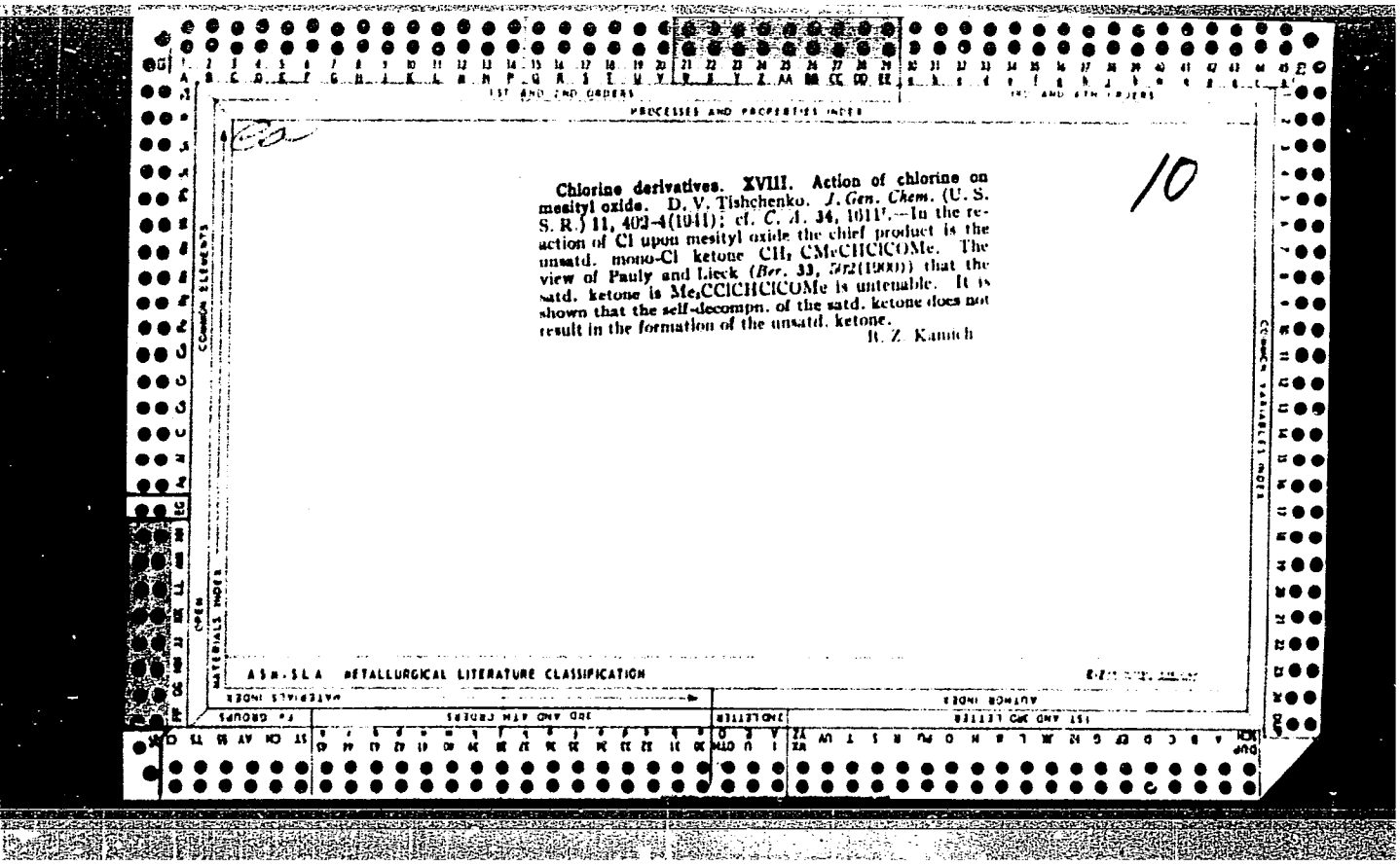
Chlorine derivatives of aliphatic series. XVI. Vicinal effect. D. V. Tishchenko. *J. Gen. Chem.* (U. S. S. R.) 9, 1380-8(1939); *cf. C.-A.* 33, 4190⁴.—The sapon. rate of aliphatic primary, secondary and tertiary 1,2-, 1,3- and 1,4-dichlorides is studied by heating the compds. in sealed tubes with aq.-alc. 0.1 *N* NaOH at the required temps. (30-100°) for 1-13 hrs. and titrating the cold reaction products with 0.1 *N* NaOH or HCl at definite intervals of time. The compds. tested are: $(CH_2ClCHMe)_2$; $CH_2(CClMe_2)_2$, b$_{15}$ 51.5°; $(CClMe_2)_2$, m. 130-60°; $(CH_2CHClMe)_2$, b$_{15}$ 62-2.5°, d_4^{20} 1.0520, n_D^{20} 1.4495, M. R.$_c$ 39.53; $CH_2(CHClMe)_2$, b$_{760}$ 142-7°, d_4^{20} 1.0634, n_D^{20} 1.4399; $(CHClMe)_2$, b. 116-17°; $(CH_2CH_2Cl)_2$, b$_{760}$ 155°; $CH_2(CH_2Cl)_2$, b. 120-2°, d_4^{20} 1.204, n_D^{20} 1.452, M. R.$_c$ 25.3; $(CH_2Cl)_2$. Again the tabulated results show that in each series the sapon. velocity decreases from 1,2- to 1,4-dichlorides and between the series from the primary to tertiary. With changes in the NaOH concn. the sapon. rate of tertiary dichlorides is practically unchanged, while that of primary and secondary dichlorides decreases sharply. For understanding of the varied reactivity and magnitude of dipole moments of polysubstituted org. compds. the conception of *"vicinal effect"* is suggested. The latter in the presence of neg. substituents (the valency electronic pair of the link C—X is nearer to X) decreases the dipole moments of the bond C—X and retards the ionization of atoms or the X groups. Pos. substituents (electron pair is closer to C) decrease the moments of the C—X bonds and facilitate the ionization of X groups. The vicinal effect is more pronounced with the greater propinquity of polar substituents and practically disappears at the 1,4-position.

Chas. Blanc

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION



Chlorine derivatives. XVIII. Action of chlorine on mesityl oxide. D. V. Tishchenko. *J. Gen. Chem.* (U. S. S. R.) 11, 402-4(1941); cf. *C. A.* 34, 1011⁹.—In the reaction of Cl upon mesityl oxide the chief product is the unsatd. mono-Cl ketone $CH_2CMeCHClCOMe$. The view of Pauly and Lieck (*Ber.* 33, 512(1900)) that the satd. ketone is $Me_2CClCHClCOMe$ is untenable. It is shown that the self-decompn. of the satd. ketone does not result in the formation of the unsatd. ketone.

B. Z. Kanuch

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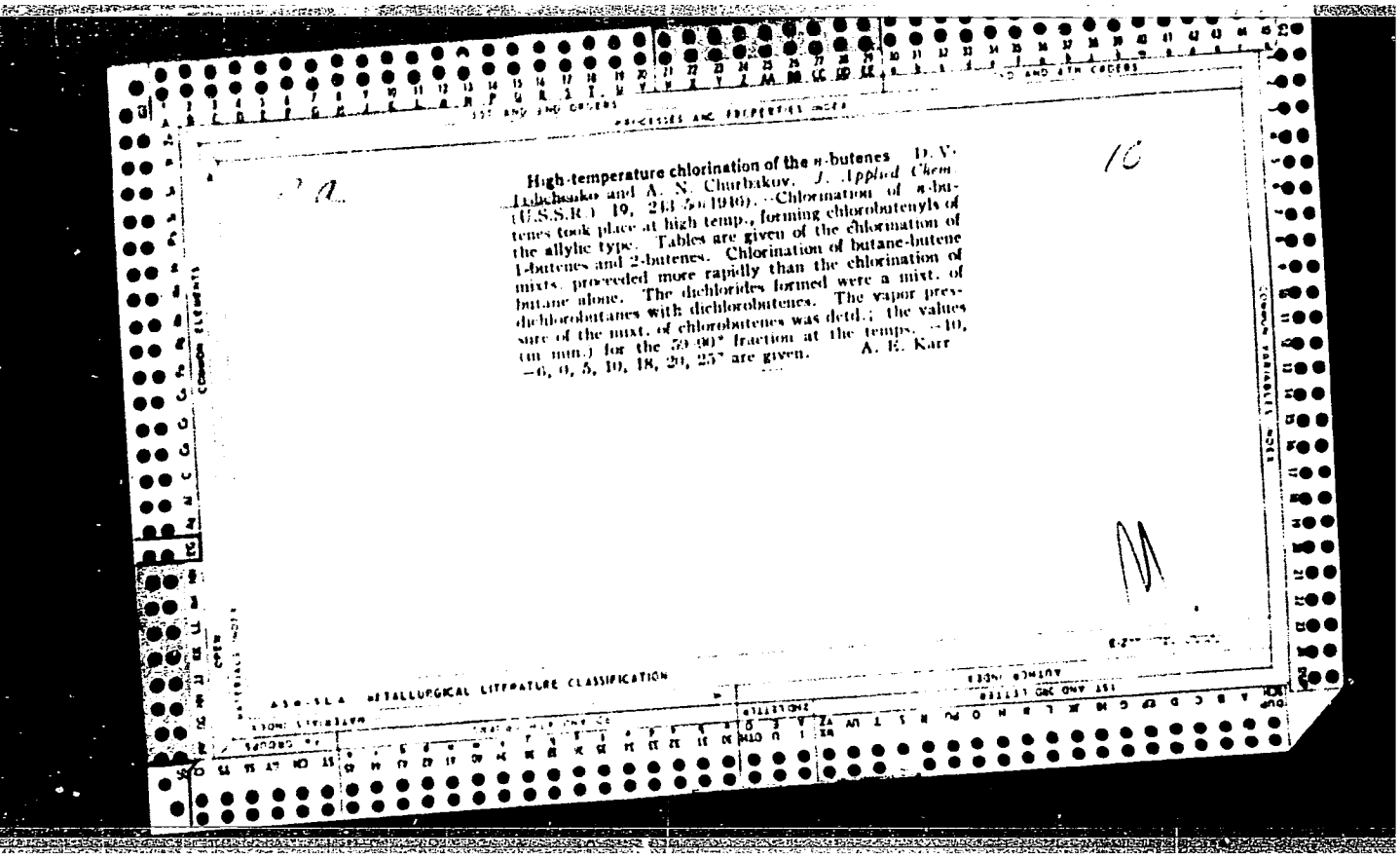
A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION



High-temperature chlorination of the n-butenes D. V. Lebedenko and A. N. Churbakov. *J. Applied Chem. (U.S.S.R.)* 19, 243-5 (1946).—Chlorination of n-butenes took place at high temp., forming chlorobutenyls of the allylic type. Tables are given of the chlorination of 1-butenes and 2-butenes. Chlorination of butane-butene mixts. proceeded more rapidly than the chlorination of butane alone. The dichlorides formed were a mixt. of dichlorobutanes with dichlorobutenes. The vapor pressure of the mixt. of chlorobutenes was detd.; the values (in mm.) for the 59-90° fraction at the temps. −10, −6, 0, 5, 10, 18, 21, 25° are given. A. E. Karr

TISHCHENKO, D. V. PA 15T70

USSR/Chemistry - Unsaturated Compounds Mar 1947
Chemistry - Ethylene

"A General Method for Obtaining 1,3-Diene Compounds from Corresponding Saturated and Ethylene Hydrocarbons," D. V. Tishchenko, 10 pp

"Zhur Obshch Khim" Vol XVII, No 3

Description of the method, a catalytic splitting off of HCl in the presence of water vapor.

15T70

TISHCHENKO, D.

PA 64T31

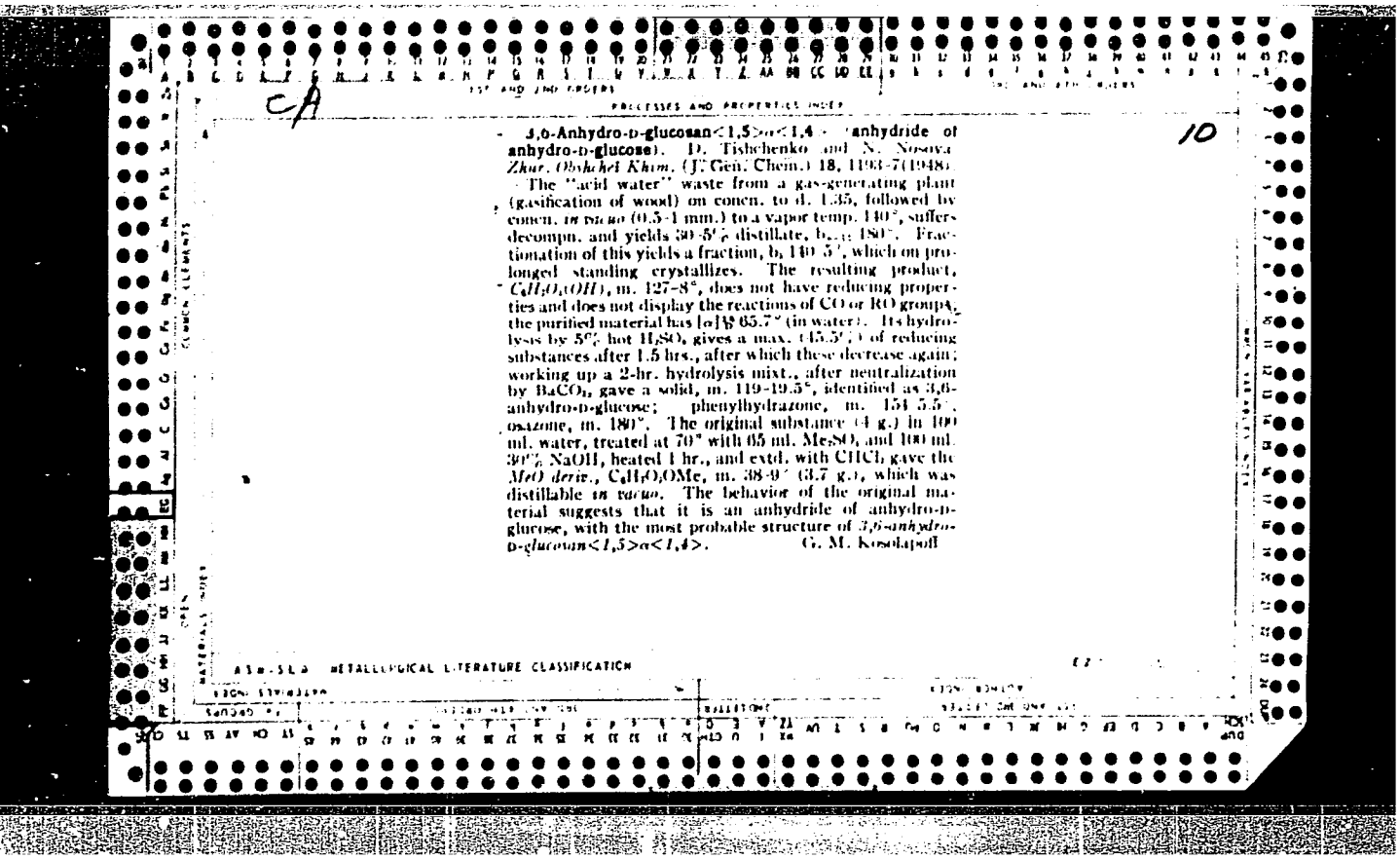
USSR/Chemistry - Alkyl Chlorides Jan 1948
Chemistry - Chlorine Substitution

"Research in the Field of Chlorine Derivatives: II, Effect and Order of Substitution of Hydrogen Atoms by Chlorine in Chloroalkyls," D. Tishchenko, N. Zhokhovets, $8\frac{1}{2}$ pp

"Zhur Obshch Khim" Vol XVIII (LXXX), No 1

Studies of the effects of chlorine on 1 and 2 chlorpentane. Observed that amount of dichlorides obtained agreed completely with theoretical calculations. Theory of alternating polarity does not apply to subject studies. Chemical inertness of boundary polyfluorides and poly-chloro-fluorides is partial vicinal effect. Submitted 3 Jan 1947.

64T31



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PROCESSES AND PROPERTIES INDEX

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3,6-Anhydro-D-glucosan<1,5>α<1,4 - anhydride of anhydro-D-glucose). D. Tishchenko and N. Sosova *Zhur. Obshchei Khim.* (J. Gen. Chem.) 18, 1193–7(1948). The "acid water" waste from a gas-generating plant (gasification of wood) on concn. to d. 1.35, followed by concn. *in vacuo* (0.5–1 mm.) to a vapor temp. 140°, suffers decompn. and yields 30–5% distillate, b$_{0.5}$ 180°. Fractionation of this yields a fraction, b$_1$ 140–5°, which on prolonged standing crystallizes. The resulting product, $C_6H_8O_4(OH)_2$, m. 127–8°, does not have reducing properties and does not display the reactions of CO or RO groups; the purified material has $[\alpha]_D^{20}$ 65.7° (in water). Its hydrolysis by 5% hot H_2SO_4 gives a max. (45.5%) of reducing substances after 1.5 hrs., after which these decrease again; working up a 2-hr. hydrolysis mixt., after neutralization by $BaCO_3$, gave a solid, m. 119–19.5°, identified as 3,6-anhydro-D-glucose; phenylhydrazone, m. 154–5.5°, osazone, m. 180°. The original substance (4 g.) in 100 ml. water, treated at 70° with 65 ml. Me_2SO_4 and 100 ml. 30% NaOH, heated 1 hr., and extd. with $CHCl_3$ gave the *MeO deriv.*, $C_6H_7O_4OMe$, m. 38–9° (3.7 g.), which was distillable *in vacuo*. The behavior of the original material suggests that it is an anhydride of anhydro-D-glucose, with the most probable structure of *3,6-anhydro-D-glucosan<1,5>α<1,4>*. G. M. Kosolapoff

A5m-5L3 METALLURGICAL LITERATURE CLASSIFICATION

USSR.

Continuous distillation of gas-producer wood tar. D. Tishchenko, N. Silishchenskaya, and N. Borisova. *Zhur. Prikład. Khim.* 21, 615-21(1948).--Tar leaving the scrubbing system contains up to 40% emulsified water very slowly sepd. by standing. Difficulty in sepn. is due to (1) small difference between sp. gr. of tar and emulsified acid water, (2) viscosity of tar phase of emulsion, (3) small diam. of drops of emulsified water. App. is described which yields oil and pitch directly from the wet tar. Expt. evidence is presented indicating acid hydrolysis of high-mol. compds. of tar during distn. which increases yield of oil.

V. N. Bednarski

TISHCHENKO, D.

PA 15/49T13

USSR/Chemistry - Generators, Gas Sep 48
Chemistry - Analysis

"Chemical Composition of Acid Waters Obtained From Wood-Fed Gas Generators," D. Tishchenko, K. Bardysheva, N. Nosova, Cen Sci Res Lumber Chem Inst, 8¼ pp

"Zhur Prikład Khimii" Vol XXI, No 9, [illegible]

Pitch and acid water are by-products during purification of gas obtained in wood-fed gas generators. Describes chemical analysis of acid water.

[redacted]

15/49T13

TISHCHENKO, D.

"A new type of transformation of terpenes." (p. 563)

SO: Journal Of General Chemistry, (Zhurnal Obshchei Khimii), 1950, Vol. 20, No. 4.

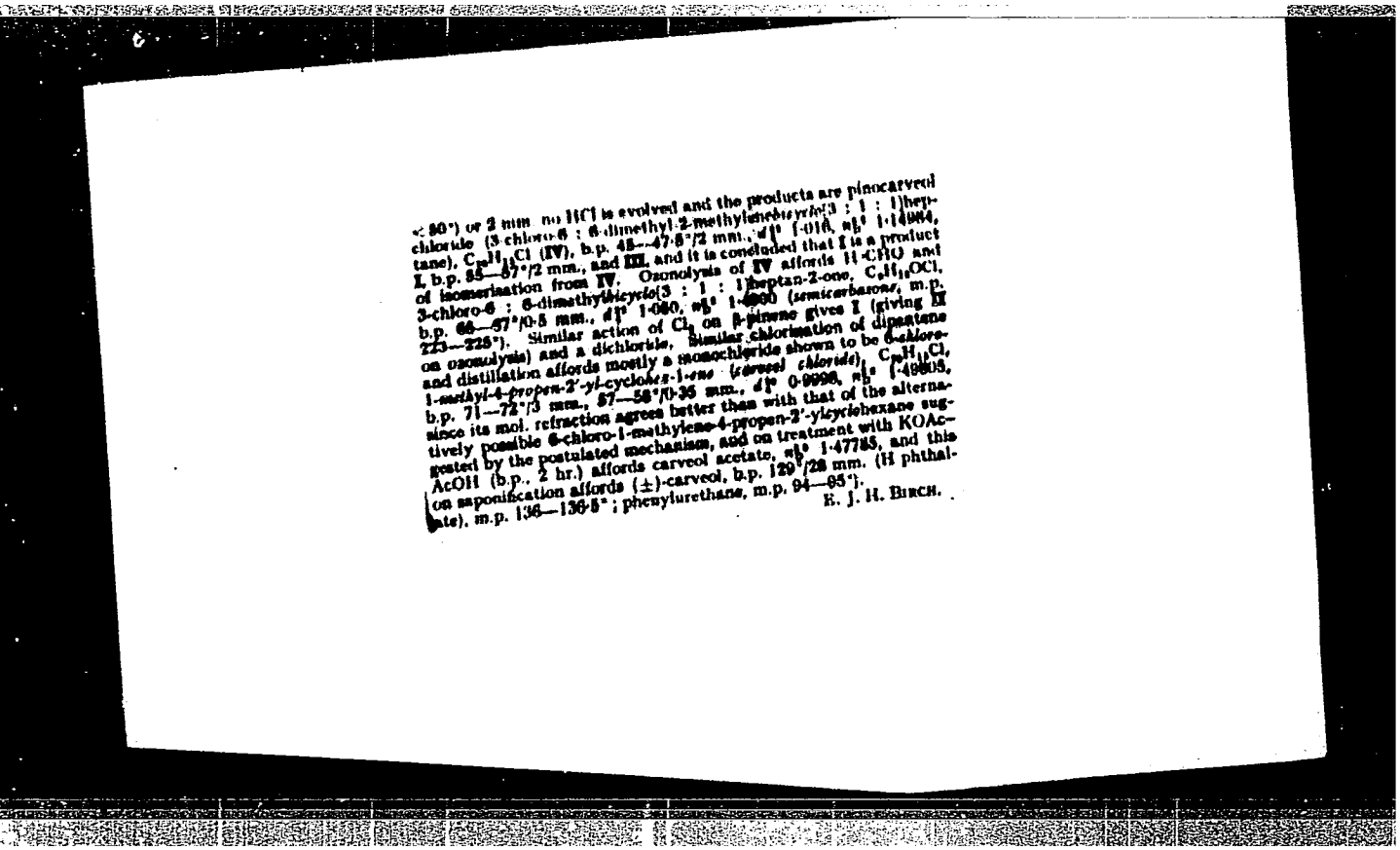
BA

AII- 5

New types of terpene transformations. II. Action of chlorine upon α- and β-pinenes. D. Tishchenko and B. Matveev. **III. Action of chlorine upon dipentene.** D. Tishchenko and V. Foliadov (*J. gen. Chem. USSR*, 1950, **20**, 896—904, 905—909 [U.S. transl., 931—940, 941—948]).—The possible schemes for the action of Cl_2 upon a branched terpene double bond are discussed and the addition mechanism and substituent mechanism are rejected in favour of a primary reaction of the polarised Cl_2 mol. with the negatively polarised end of the double bond and either evolution of HCl, shift of the double bond (forming an allyl chloride structure), and formation of a monochloride ("anomalous reaction") or addition of the "negative" Cl to the positive end of the double bond forming a dichloride ("classical reaction") (cf. A., 1951, II, 784). Cl_2 reacts with α- and β-pinenes and dipentene affording products in accordance with the suggested mechanism provided the temp. of fractionation is <70°. The amount of the "anomalous" reaction is measured by the liberation of HCl absorbed in $NaHCO_3$.

Cl_2 is passed into α-pinene containing suspended $NaHCO_3$ at −3 to −5°, and the product is fractionated. When the fractionation is carried out at 13 mm., a temp. of 130° is required and the products identified are *p*-cymene, myrtenyl chloride (2-chloromethyl-6 : 6-dimethyl*bicyclo*[3 : 1 : 1]hept-2-ene), $C_{10}H_{15}Cl$ (I), b.p. 87—89°/13 mm., d_4^{15} 1·0085, n_D^{15} 1·4978 [identified by oxidation with $KMnO_4$ in $COMe_2$ to pinic acid], and a *product*, $C_{10}H_{14}O_2Cl$ (II) (also obtained on ozonolysis), and 2 : 6-dichlorocamphane (2 : 6-dichloro-1-methyl*bicyclo*[2 : 2 : 1]heptane), $C_{10}H_{16}Cl_2$ (III), m.p. 173—174°. When fractionation is carried out at 7 mm. (temp.

over



< 80°) or 2 mm. no HCl is evolved and the products are pinocarveol chloride (3-chloro-6 : 6-dimethyl-2-methylenebicyclo[3 : 1 : 1]heptane), $C_{10}H_{15}Cl$ (IV), b.p. 45—47·5°/2 mm., d_4^{15} 1·016, n_D^{15} 1·4984, I, b.p. 55—57°/2 mm., and III, and it is concluded that I is a product of isomerisation from IV. Ozonolysis of IV affords H·CHO and 3-chloro-6 : 6-dimethylbicyclo[3 : 1 : 1]heptan-2-one, $C_9H_{13}OCl$, b.p. 66—67°/0·5 mm., d_4^{15} 1·080, n_D^{15} 1·4990 (*semicarbazone*, m.p. 223—225°). Similar action of Cl_2 on β-pinene gives I (giving II on ozonolysis) and a dichloride. Similar chlorination of dipentene and distillation affords mostly a monochloride shown to be 6-chloro-1-*methyl*-4-*propen*-2′-*yl*-cyclohex-1-*ene* (*carveol chloride*), $C_{10}H_{15}Cl$, b.p. 71—72°/3 mm., 57—58°/0·35 mm., d_4^{15} 0·9998, n_D^{15} 1·49005, since its mol. refraction agrees better than with that of the alternatively possible 6-chloro-1-methylene-4-propen-2′-ylcyclohexane suggested by the postulated mechanism, and on treatment with KOAc-AcOH (b.p., 2 hr.) affords carveol acetate, n_D^{15} 1·47785, and this on saponification affords (±)-carveol, b.p. 120°/28 mm. (H phthalate), m.p. 136—136·5°; phenylurethane, m.p. 94—95°).

E. J. H. Birch.

TISHCHENKO, D.

D. Tishchenko and T. Danilova - "A new type of terpene transformation. IV. The action of chlorine on terpinolene and santene." (p. 998)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1950, Vol. 20, No. 6.

TISHCHENKO, D.

D. Tishchenko and A. Khovanskaya - "A new type of terpene transformation. V. Reaction of chlorine with 3-carene." (p. 1003)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1950, Vol. 20, No. 6.

CA

10

The mechanism and end-products of autoxidation of rosin acids. D. Tishchenko, N. Komalalov, K. Kiesel, and S. Malevskaya. *Zhur. Obshchei Khim.* (J. Gen. Chem.) **20**, 1225-35(1950). The course of the autoxidation appears to proceed by entry of O atoms between C and H in α positions to unsatd. bonds, with resulting formation of OH groups. For primary rosin acids and abietic acid there are 4 such positions and the highest oxidation product should be $C_{20}H_{30}O_8$, which was actually found exptly. for abietic acid. The highest natural autoxidation products are $C_{20}H_{30}O_6$ and are colored, apparently because of oxidation of 2 OH groups to carbonyls, yielding a *p*-*quinone* structure. These autoxidation products retain the original double bonds and have 2 OH groups. The results disagree with conclusions of Pavlyuchenko (*C.A.*, **30**, 3196[8]), who suggested oxidation at unsatd. links as the site of reaction. The lir-rosin specimen used as starting material yielded such autoxidation products, which were sepd. by fractional soly. in Et_2O and petr. ether; the products ranged from $C_{20}H_{30}O_4$ to $C_{20}H_{30}O_6$ and were yellow to red in color; all retained 2-2.7 double bonds per mole and 1.8-2.7 OH groups. Heating these colored acids with reducing agents (Zn-AcOH, SO_2, H_2S) led to loss of color and quant. expts. corresponded to the requirements of a quinone structure. Oxidation of the O_4 fraction with $KMnO_4$ gave AcOH, hydroxybutyric acid, some $(CO_2H)_2$, and higher acids isolated as Ag salts, with compns. between $C_{11}H_{19}O_4Ag$ and $C_{12}H_{19}O_4Ag_2$; the latter heated with MeI gave Me esters, $b_{0.4}$ 135-60°, corresponding to $C_{11}H_{19}O_3(OMe)_3$. Five-year air exposure of abietic acid yielded an unstated amt. of the $C_{20}H_{30}O_6$ acid product, yellow, contg. 4 OH groups. α-Sapinic acid after 6 months exposure similarly gave the highly oxidized fraction (sol. in Et_2O, insol. in ligroin) which corresponded to $C_{20}H_{30}O_6$.

G. M. Kosolapoff

TISHCHENKO, D.

USSR/Chemistry - Fluorocarbons Sep 51

"Vicinal Effect. II. Anomalous Properties of Fluorocarbons," D. Tishchenko. Chair of Org Chem, Forestry Eng Inst imeni Kirov

"Zhur Obshch Khim" Vol XXI, No 9, pp 1625-1632

Proposes explanation for 11 different phys chem anomalies in properties of fluorocarbons on basis of concept of "vicinal effect" (effect of proximity). According to this concept the C-F bonds in fluorocarbons are almost or completely homeopolar, with resultant effects on properties of compds.

191T41

VASIL'YEV, L. (g. Tyumen'); CHICHKO (g. Kiyev); STARODUB, D. (g. Kiyev); KALUZHSKIY, G. (g. L'vov); SMIRNOV, V.; HEHENIN, A.; ORLOV, I.; FERUK, V. (Kuybyshev); BYCHININ, I. (Kuybyshev); HASHKO, V.; SHEVKUN, Yu. (Khar'kov); ISTYUFEYEV, V. (Leningrad); GATSANYUK, P. (Chernigovskaya obl.); SKURKO, L.; HABYUK, M.; GURANOV, L. (Krasnodar); TISHCHENKO, D. (st. V. Sadovaya); YEFIMOV, M.S. (Leningrad); FEDOROV, V.; SUKHOV, A.; TIMOSHENKO, I. (Omskaya oblast'); KRIVTSUN, B. (Khar'kov); BARANTSEV, N. (Fedosiya).

Exchange of experience. Radio no.1:31,32,35,39,40. Ja '59.. (MIRA 12:3)

(Radio)

TISHCHENKO, D.

Chemical Abst.
Vol. 48 No. 5
Mar. 10, 1954
Organic Chemistry

New transformation type of terpene. VI. The action of chlorine on α-terpinene. D. Tishchenko and N. Summ. *J. Gen. Chem. U.S.S.R.* 22, 861–4(1952)(Engl. translation). VII. Preparation of alcohols and ethers from chloroterpenes. D. Tishchenko, A. Khovanskaya, and T. Danilova. *Ibid.* 865–70. See *C.A.* 47, 5382*i*, 5383*e*. VIII. Synthesis of α-dipenten-6-ylacetoacetic and α-dipenten-6-ylmalonic esters and the products of their cleavage. D. Tishchenko and V. Foliadov. *Ibid.* 999–1002.—See *C.A.* 47, 8041*d*.
H. L. H.

MF
7-27-54

[illegible], T., [illegible], [illegible].
DANILOVA, T.

Terpenes

New type of terpene transformations. Part 7. Preparation of alcohols and ethers from terpene hydrochlorides., Zhur., ob. khim., 22, no. 5, 1952

Monthly List of Russian Accessions, Library of Congress November 1952. Unclassified.

TISHCHENKO, D., POLYAKOV, V.

Terpenes

New type of terpene transformations. Part 8. Synthesis of terpenylacetoacetic and terpenylmalonic esters and their cleavage products. Zhur., ob. khim. 22, no. 6, 1952.

9. Monthly List of Russian Accessions, Library of Congress, NOVEMBER 1952 1953, Uncl.

TISHCHENKO, D.

Chemical Abst.
Vol. 48 No. 6
Apr. 25, 1954
Organic Chemistry

New type of isomeric transformations IX Introduction of chlor-terpenes into organomagnesium synthesis D Tishchenko and K Kursel *J Gen Chem (U S S R)* 22 1429-43(1952)(Engl translation)—See *C A* 47 9309d XI The action of chlorine on α-fenchene D Tishchenko and S Sheina *Ibid* 1853-7—See *C A* 47, 9308i XII Synthesis of nitriles of the homoterpene series D Tishchenko N Pervantseva and V Feitadov *Ibid* 1858-71 See *C A* 47 9307g H L H

TISHCHENKO, D.; FOLIADOV, V.

New type of terpene transformations. X. Synthesis of homoterpenes. Zhur. Obshchay Khim. 22, 1591-3 '52.
(CA 47 no.18:9306 '53) (MLRA 5:9)

TISHCHENKO, D.; SHEINA, S.

New type of terpene transformations. XI. Action of chlorine on α-fenchene. Zhur. Obshchey Khim. 22, 1824-29 '52. (CA 47 no.18:9306 '53) (MLRA 5:11)

1. S.M.Kirov Academy of Forestry.

TISHCHENKO, D.; PERSIANTSEVA, N.; FOLIADOV, V.

New type of terpene transformations. XII. Synthesis of nitriles of the homo-terpene series. Zhur. Obshchey Khim. 22, 1829-32 '52. (MLRA 5:11)
(CA 47 no.18:9307 '53)

USSR/Chemistry - Wood and Cellulose Jun 52

"Conference on the Chemical Treatment of Wood and Cellulose, Leningrad, 28 - 31 January 1952," D. V. Tishchenko

"Zhur Prik Khim" Vol XXV, No 6, pp 673-676

Among others, the following subjects were discussed: production of maleic acid, 5-nitrofurfural diacetate (starting material for the synthesis of furacylin and other chemotherapeutic agents) with a yield of 65-70% etc., from furfural; the possibility of fire-proofing pressed wood plates by esterification with phosphoric acid or treatment with silicone resins;

218T40

USSR/Chemistry - Wood and Cellulose Jun 52
(Contd)

the theoretical and technological aspects of a process in which hydrolysis of cellulose (in the form of sawdust) with conc sulfuric acid and production of superphosphate from apatite are combined; distillation and complete chem conversion of wood by heating it in a high-boiling (275-280°) kerosene fraction; generation of gas from waste wood and sawdust and use of this gas at power plant and in driers equipped with flameless combustion burners.

218T40

TISHCHENKO, D. V.

TISHCHENKO, D.

25

Vicinal effect. III. Oxygen containing organic compounds. D. Tishchenko (S. M. Kirov Forestry Academy, Leningrad). *Sbornik Statei Obshchei Khim.* 2, 1051-62 (1953); cf. *C.A.* 46, 4408c.—Examn. of properties of various O-containing org. compounds shows the following. Accumulation of neg. atoms or groups in an O-contg. molecule leads to strengthening of the bonds of these atoms or groups to the molecule (C atoms). This explains the relative ease of pinacol rearrangement of α-glycols, ease of formation of esters of alcs., dehydration of alcs., and β-hydroxy acids, comparative stability of 1,1-diols and 1,1,1-triols, relative ease of hydrolysis of acetals, ketals, hemiacetals and chloroacetals, as well as the reactivity of halogen in acyl halides, and acidity of H derivs. The vicinal effect is roughly proportional to the dipole moment of the atoms or groups relative to C.

G. M. Kosolapoff

TISHCHENKO, D

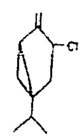
3

The thermal decomposition of cellulose. D. Tishchenko and T. Fedortshchev. *Faserforsch u. Textiltech.* 4, 529–30 (1953).—See C. A. 47, 1023i. F. E. Brauns

TISHCHENKO, D.

Chemical Abst.
Vol. 48
Apr. 10, 1954
Organic Chemistry

A new type of transformation of terpenes. XIII. Action of chlorine on a thujene. D. [illegible]chenko and I. Danilova [illegible] Forest. Acad., Leningrad). *Zhur.* [illegible] *Khim.* 23, [illegible] ([illegible]). [illegible] α Thujene [illegible] 44 [illegible] 47 [illegible] under [illegible] described conditions [illegible] chlorinated [illegible] ml. [illegible] HCl, 30 g. KMnO₄ and 100 g. NaHCO₃ gave 120.9 g. org. products with 70.8% "anomalous" material. Fractionation yielded $C_{10}H_{15}Cl$, $b_{?}$ 37°, d_{20} 0.984, n^{20}_D 1.4862, contg. allylic Cl, identified as *3-chlorosabinene* (I). Ozonization of I in $CHCl_3$ gave a viscous ozonide, $C_{10}H_{15}O_3Cl$, hydrolyzed to HCO_2H, HCHO, and a *chlorodiketone*, C_9H_{13}-O_2Cl, $b_{0.4}$ 86–8°, d_{20} 1.105, n^{20}_D 1.4896, which with $KMnO_4$ gave an *acid*, m. about 140° (*Ag salt*, $C_9H_{12}O_4Ag_2$). The diketone gave a *semicarbazidosemicarbazone*, $C_{11}H_{20}O_2N_6$, m. about 220°. I heated with KOAc in AcOH gave 2 fractions: a *dehydroterpene* (II), $C_{10}H_{14}$, b_8 40–1°, d_{20} 0.855, n^{20}_D 1.4860, a deep orange liquid, and *terpenol acetate*, $C_{10}H_{15}OAc$, b_8 74–6°, d_{20} 0.969, n^{20}_D 1.47065. The latter heated with alc. KOH gave a little dehydroterpene identical with the above and the *terpenol* $C_{10}H_{16}O$, b_3 66–8°, d_{20} 0.942, n^{20}_D 1.4831°.


(I)


(II)

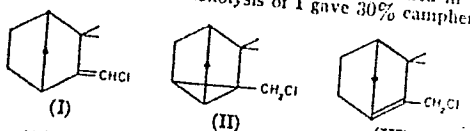
G. M. Kosolapoff

yielded the 2,4-dinitrophenylhydrazone of Ph_2CHCHO. Apparently the desired $Ph_2C(SH)CHO$ decompd. immediately into Ph_2CS and HCHO. G. M. Kosolapoff

Tishchenko, D.

New type of transformations of terpenes. XIV. Reaction of chloring with camphene. D. Tishchenko. *Zhur. Obshchei Khim.* 23, 1002-13(1953); cf. *C.A.* 44, 9381*d*; see previous papers) In the presence of enough CCl_4 to dissolve the substance (350 g. camphene, 160 g. CCl_4, 200 g. $NaHCO_3$, 100 g. $KMnO_4$, 750 ml. HCl) gave 56% products of "anomalous" reaction. There are formed 3 primary products: *chlorocamphene* (I), *7-chlorotricyclene* (II), and *3-chloromethyl-2,2-dimethylbicyclo[2.2.1]hept-3-ene* (III); the latter forms, contrary to the Bredt rule (cf. T., *C.A.* 44, 7810*d*). Some 40% camphene dichloride is formed in the "normal" reaction. Ozonolysis of I gave 30% camphenilone, 15% HCl, and the trichloride $C_{10}H_{15}Cl_3$, m. 127–8°, which is satd. III is readily saponf., through the *acetate*, to the corresponding *terpenol*, m. 59.5–60.0°; the *acetate*, b_1 73–4°, d_{20} 0.991, n_D^{20} 1.4731. This *camphenol* with *o*-$C_6H_4(CO)_2O$ in C_6H_6 gave the *H phthalate*, m. 142–3°; if H_2O is present in this reaction, the camphenol *isomerizes* to the corresponding *aldehyde*, b_{17} 88–9°, d_{21} 0.0525, n_D^{21} 1.4676, yielding *camphenilanaldehyde semicarbazone*, m. 207–8°, and another unknown *semicarbazone*, m. 148–9°, which is more sol. Camphenol in the presence of strong acid vapors is transformed into camphor (inactive form, m. 176–8°). The initial mixt. of I, II, and III is sepd. after treatment with AcONa which permits isolation of unreactive I, b_1 53–4°, d_{20} 1.018, n_D^{20} 1.49245, a mixt. of cis and trans forms which reacts slowly with iso-AmONa in refluxing iso-AmOH, yielding the *iso-Am ether* of *camphenilanaldehyde enol* b_4 123–5°, d_{20} 0.917, n_D^{20} 1.4680; a reaction run in sealed tube at 210° gave the ether, b_4 128–31°, d_{20} 0.916, n_D^{20} 1.4729. The ether heated with HCl gave *camphenilanaldehyde* and *iso*-AmOH. The crude I, II, and III mixt. with B_2O_3H in $CHCl_3$ gave a *camphene chloride oxide*, $C_{10}H_{16}OCl_2$, m. 90–110°, along with other products. I with $KMnO_4$ in aq. AcOH gave *camphenilone*, m. 105–6°, and *dehydrocamphenilic acid*, m. 150–1°. I heated with Na dust in pentane gave a *hydrocarbon*, m. 36–42°, b_{15} 151–4°, identified as *tricyclene*. Camphenol H phthalate with aq. $KMnO_4$ gave a neutral product without CHO groups, apparently a *diketo alc.*, $C_{18}H_{18}O_3$, m. 169–70°. Camphenol with 4% $KMnO_4$ gave *kelopinic acid*, $C_{10}H_{14}O_3$, m. 230–2°. Stronger oxidation with concd. aq. $KMnO_4$ gave *cis-apocamphoric acid*, m. 208–9° (*anhydride*, m. 175–6°), *isocamphoronic acid*, $C_9H_{14}O_6$, m. 166–7°, and AcOH. The ozonolysis products of I appear to contain a *lactone*, which could not be isolated in a pure state, but was detected by titration with hot NaOH.

G. M. Kosolapoff



(I) (II) (III)

TISHCHENKO, D.; SHEINA, S.

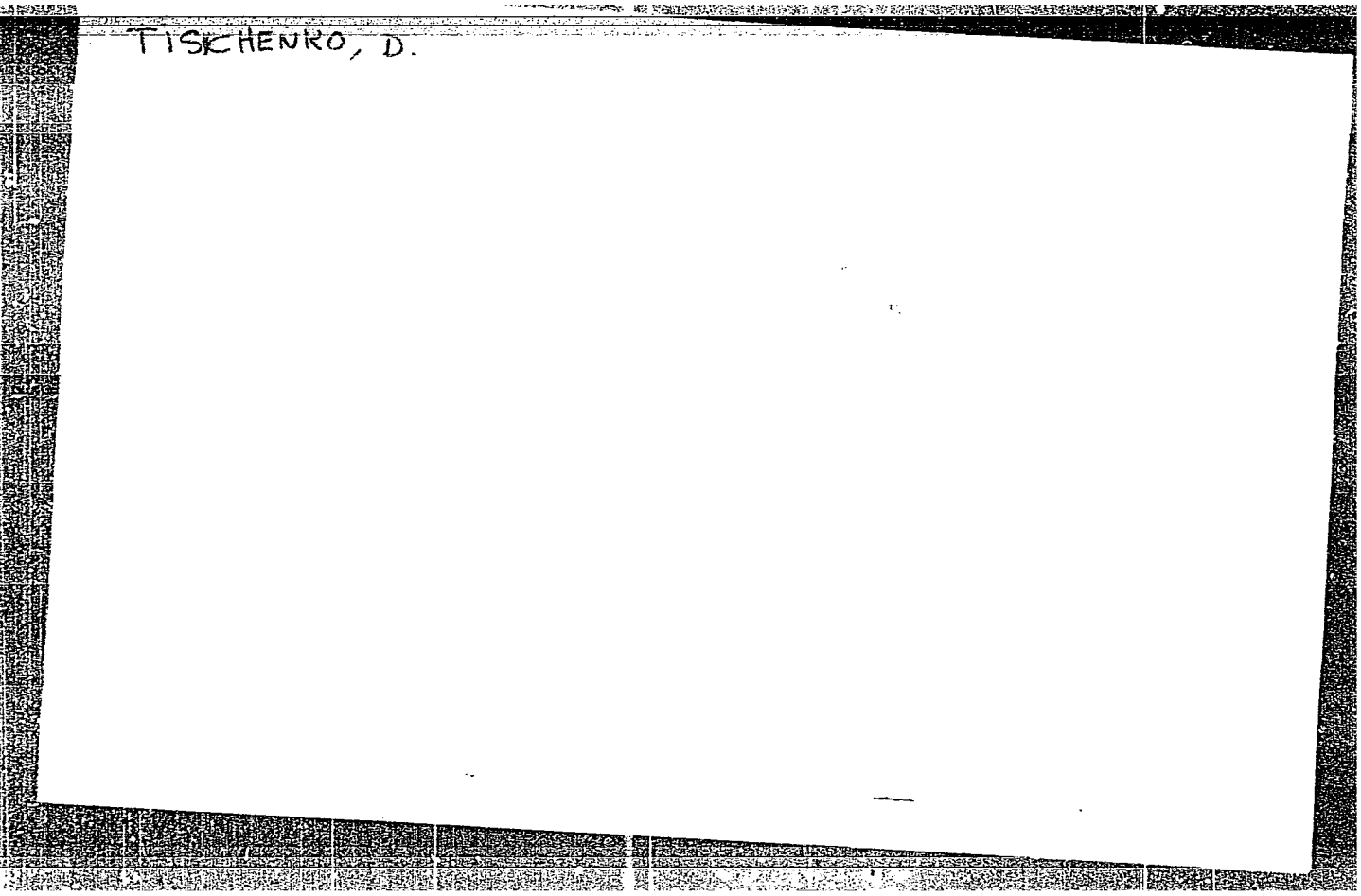
New type of terpene conversions. Part 15. Action of chlorine upon -fenchene. Zhur.ob.khim. 23 no.8:1405-1406 Ag '53. (MLRA 6:8)

1. Kafedra organicheskoy khimii Lesotekhnicheskoy akademii im. S.M.Kirova. (CA 47 no.22:12312 '53)
(Fenchene)

TISHCHENKO, D.; UVAROV, I.

New type of terpene conversions. Part 16. Structure and certain conversions of camphene dichloride. Zhur.ob.khim. 23 no.8:1407-1414 Ag '53. (MLRA 6:8)

1. Kafedra organicheskoy khimii Lesotekhnicheskoy akademii im. S.M.Kirova. (CA 47 no.22:12312 '53) (Camphene dichloride)



TISHCHENKO, D.; FEDORISHCHEV, T.

Thermal depolymerization of cellulose. Zhur. Priklad. Khim. 26, 393-6 '53. (CA 47 no.19:10221 '53)
(MLRA 6:4)

Separation of phenols from settled hydrolytic tar. D. V. Tishchenko, L. V. Gordon, and A. N. Vodzinskaya. *Gidroliz. i Lesokhim. Prom.* 8, No. 6, 6–8(1955).—Tech. problems of a continuous hydrolytic wood tar (I) sepn. process are discussed. The 1st step is distg. off a mixt. of phenolic and neutral substances, consisting of alcs., ketones, esters, $C_{13}H_8$, phenanthrene, and their homologs. I is extd. with $NaHCO_3$ or Na_2CO_3 and with NaOH. Phenolates are then washed with benzene or Et_2O, and decompd. with CO_2. Acidification and distn. of the Na_2CO_3 ext. gives about 5% AcOH, 10–15% $EtCO_2H$ and $PrCO_2H$, 30–35% $AmCO_2H$, and a substantial amt. of higher acids and some methylcyclopentanoline.

T. Jurecic

Cent. Sci. Res. Lab. of Chem. Inst.

TISHCHENKO, D. V.

USSR/Chemical Technology - Chemical Products and Their Application. Wood Chemistry Products. Cellulose and Its Manufacture. Paper, I-23

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 63343

Author: Tishchenko, D. V., Vodzinskaya, A. N., Filippov, L. A.

Institution: -None Treatise-Tech. Coord.

Title: Recovery of Guaiacol from Wood-Chemical Phenols

Original Periodical: Gidroliznaya i lesokhim. prom-st, 1956, No 3, 6-8

Abstract: Two methods have been worked out for recovery of guaiacol from wood-chemical phenols: (1) by formation of acid guaiacolate of ammonia on interaction of NH_3 with the phenols (180-212° fraction); at low temperature the guaiacolate crystallizes out is separated by filtration from the admixtures and is decomposed at 100° to yield guaiacol and ammonia; (2) by precipitation of Mg guaiacolate from alkaline solution of phenolates in the process of separation of wood-resin oils (180-212° fraction) into phenols, acids and neutral substances. Mg and NaOH are regenerated. Pure crystalline guaiacol has been isolated with a yield of up to 75% of the amount contained in the oil.

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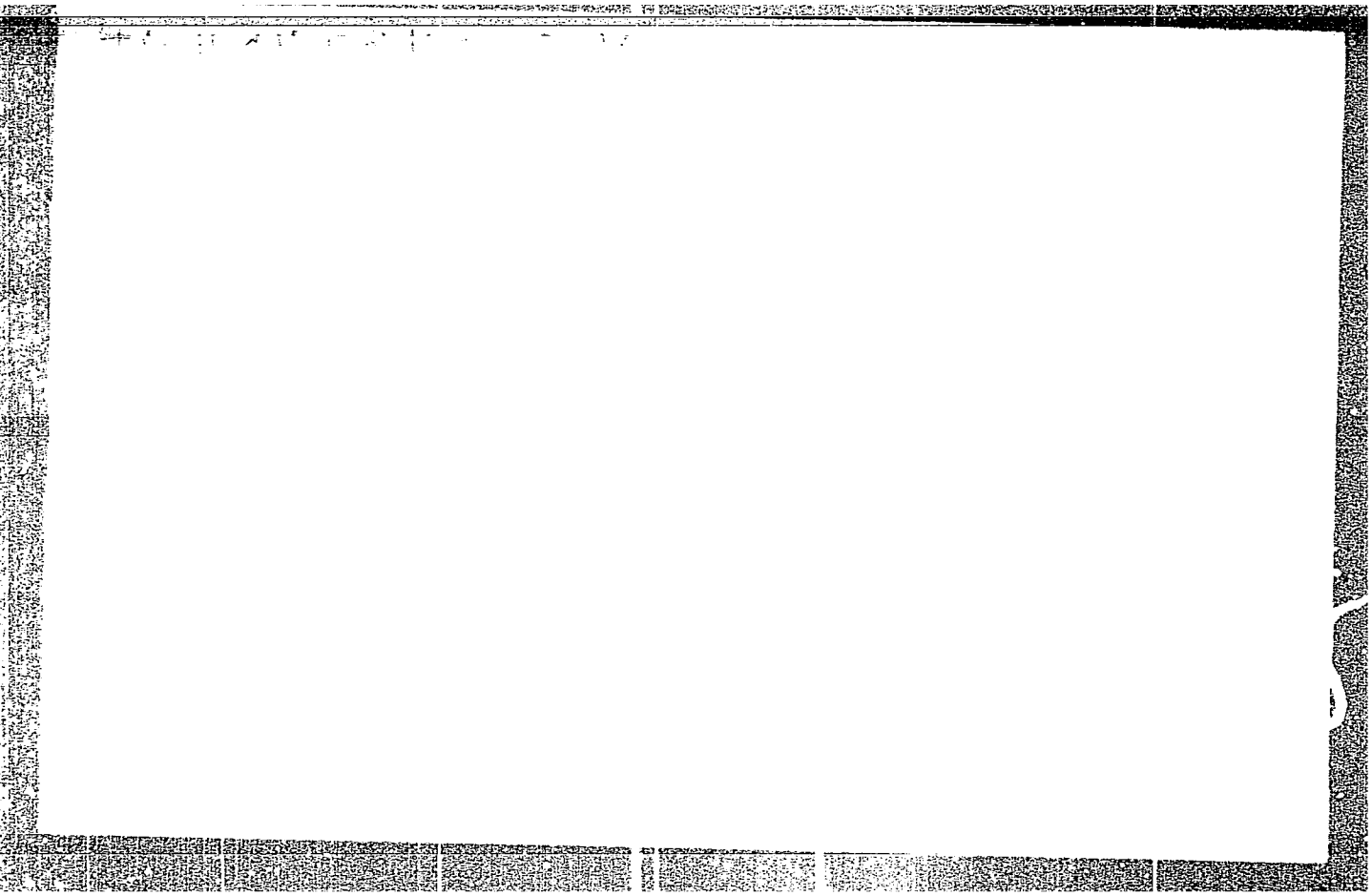

TISHCHENKO, D.; FOLIADOV, V.; MOSOVA, N.

Hydrolysis of methoxyphenols. Zhur.prikl.khim. 29 no.9: 1447-1449 S '56. (MLRA 9:11)

(Hydrolysis) (Phenol)

VODZINSKAYA, A.N.; TISHCHENKO, D.V.

Characteristics of resins processed at the Amzinskii Plant. Gidrolis. i lesokhim.prom. 10 no.5:9-11 '57. (MLRA 10:8)

1.TSentral'nyy nauchno-issledovatel'skogo lesokhimicheskogo instituta.
(Gums and resins)

AUTHORS: Tishchenko, D.; Abramova, A.; Yarzhemskaya, Ye.

TITLE: Additiveness of a Double Bond in Quaternary Carbon. Reaction of Chlorine with 1,3-Dienes (Additivnaya sposobnost' dvoynoy svayazi pri chetvertichnom uglerode. Deystviye khlora na 1,3-dieny).

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, No. 1, pp. 227-233 (U.S.S.R.)

ABSTRACT: In order to test the applicability of the M. D. L'VOV reaction to other 1,3-dienes with quaternary carbon atoms, the authors investigated the reaction of Cl with four conjugated dienes with central and end disturbances of the conjugation. The L'vov reaction was found to be the basic addition reaction in 1,4 and 1,2 positions and subordinate in 3,4 position. A new exception to the Thiele law was established for 1,3-dienes according to which double bonds can react separately during central and end disturbances caused by alkyls. The study of the structure of chlorodienes which appear to be allyl type chlorides (their chlorine atom was slightly saponified) was connected with certain known difficulties due to the allyl regroupings. In two cases ozonolyses showed the monochloride to be a mixture of allyl isomers. If the reaction between

the chlorine and one of the equivalent bonds is abnormal, the negative induction effect of the chlorine atom will polarize the remaining double bond in the diene monochloride and depolarize the newly forming bond.
The remaining double bond being subjected to the coordinated effect of two methyl groups and a Cl-atom becomes more reactive than the double bonds of the basic hydrocarbon which leads to the formation of diene dichloride. It was observed in three separate cases that the Cl-atom depolarizes monochloride double bonds and they remain intact.
There are 10 references, of which 8 are Slavic.

ASSOCIATION: Leningrad Forestry Engineering Academy (Leningradskaya Lesotekhnicheskaya Akademiya)

PRESENTED BY:

SUBMITTED: February 10, 1956

AVAILABLE:

AUTHORS: Tishchenko, D. V., and Prokhorchuk, T. 79-2-22/58

TITLE: New Type of Terpene Conversions. Part 17. Reaction of Chlorine with omega Chlorocamphene (Novyy tip prevrashcheniy terpenov, XVII. Deystviye khlora na omega-khlorkamfen)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, vol 27, No 2, pp. 377-379 (U.S.S.R.)

ABSTRACT: Reference is made to the anomalous M.D.L'vov reaction which during the reaction of chlorine with camphene showed the lowest specific weight in comparison with other terpenes. It was proven during the chlorination of omega-chlorocamphene that the specific weight of the "anomalous" reaction should be higher than in the case of camphene because the negative inductive reaction of the Cl atom strengthens the polarization of the double bond necessary for anomalous reaction. The presence of unsaturated camphene dichlorides and dichlorides of bicyclo-(1,2,2-)-3-dichloromethyl-2,2-dimethylheptene-3 in the mixture was proven in spite of the Bredt statement to the contrary. The percentage of the

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New Type of Terpene Conversions. Part 17 79-2-22/58

"anomalous" reaction was established at 63.3 and 69.5 respectively. There are 3 references, 2 of which are Slavic

ASSOCIATION: Leningrad Forestry Engineering Academy

PRESENTED BY:

SUBMITTED: March 9, 1956

AVAILABLE: Library of Congress

Card 2/2

AUTHORS: Tishchenko, D. V. and Summ, N. 79-2-23/58

TITLE: About the Structure of Pyronenes (O stroyenii pironenov)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, vol 27, No 2, pp. 379-384 (U.S.S.R.)

ABSTRACT: Investigations were conducted to establish the authenticity of the structural formulas of pyronenes as introduced by Dupont-Dulou (2). None of the formulas were found to have sufficient bases. Ozonolysis and oxidation of beta-pyronene with potassium permanganate showed that it is not identical with the beta-pyronene described by Dypont but rather a mixture of more than 80% 1,1,3-trimethyl-2-methylenecyclohexene-3 and less than 20% of 1,1,2,3-tetramethylcyclohexadiene-2,4. The correctness of structural formulas for gammapyronene, alpha and delta-pyronenes was also found as highly doubtful. It is shown how unreliable structural formulas can be when they are written on the basis of conversions not excluding the isomerization phenomena, certain qualitative reactions, etc.

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Leningrad Forest. Tech. Inst. im S. M. Kirov

About the Structure of Pyronenes

79-2-23/58

There are 8 references of which 1 is Slavic.

ASSOCIATION: Forestry Engineering Academy imeni S. M. Kirov

PRESENTED BY:

SUBMITTED: February 10, 1956

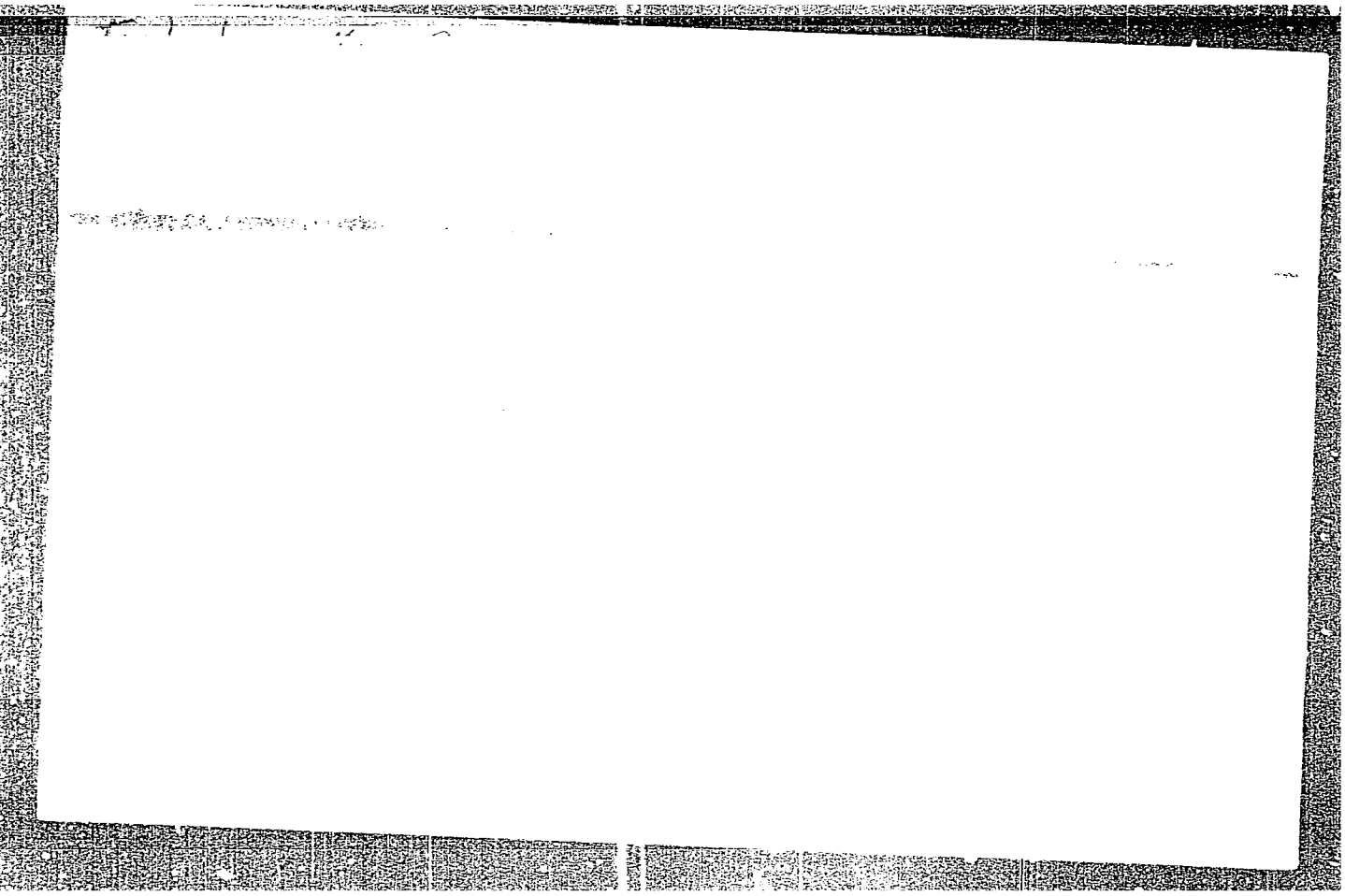
AVAILABLE: Library of Congress

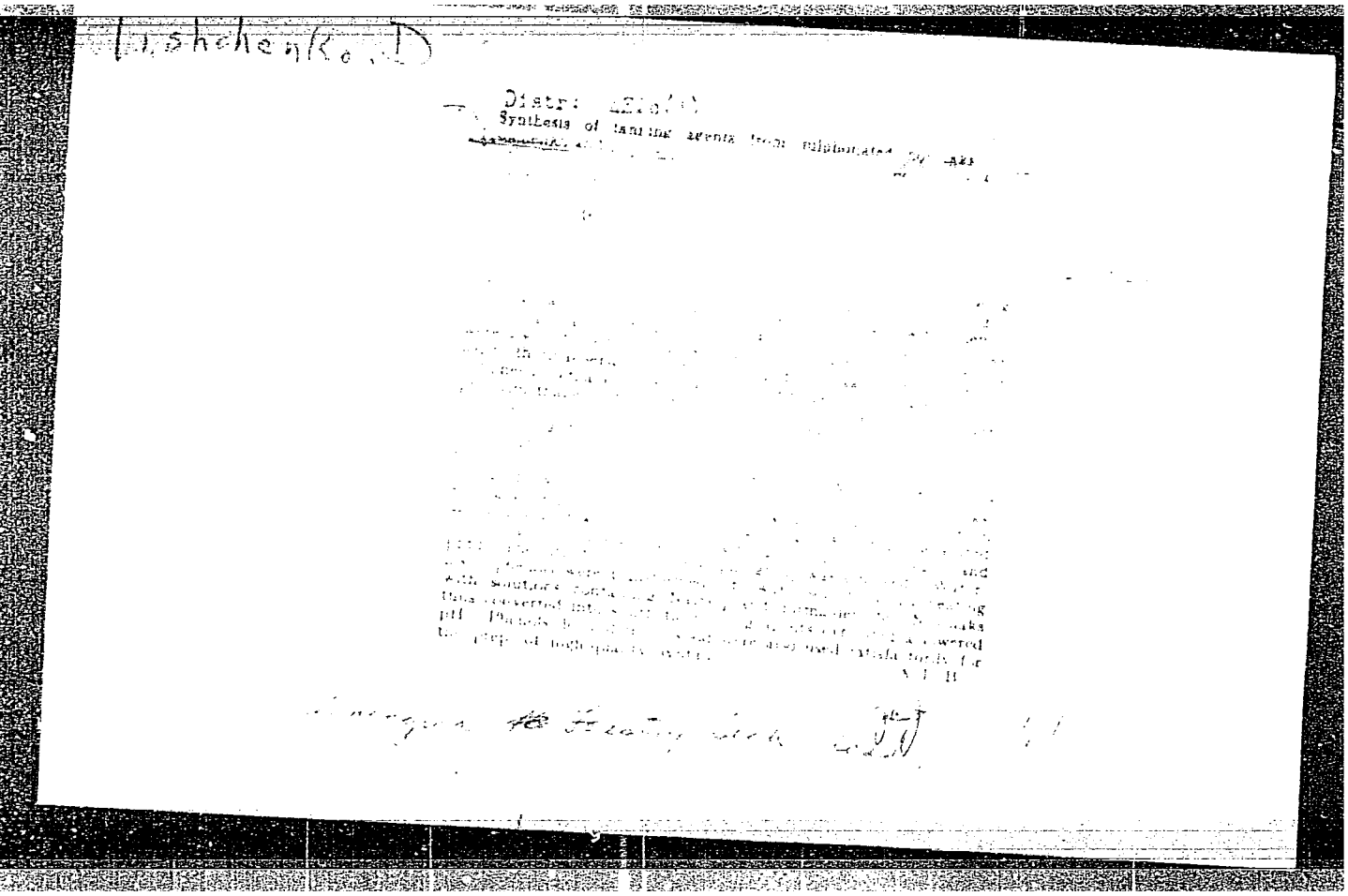
Card 2/2

TISHCHENKO, D.; DANILOVA, T.

New types of terpene conversions. Zhur. ob. khim. 27 no.3:794-799 Mr '57. (MLRA 10:6)

1. Leningradskaya lesotekhnicheskaya akademiya.
(Terpenes) (Carene) (Benzene)





TISHCHENKO, D.V.; ROZENBERGER, Ye.N.

Sulfate cooking at high temperatures. Bum.prom. 32 no.6:7-9 Je '57.
(MLRA 10:8)

1.Ordena Lenina Lesotekhnicheskaya akademiya im. S.M. Kirova.
(Woodpulp industry)

TISHCHENKO, D.V., prof.

Acid condensation of lignin. Bum. prom. 32 no.12:5-10 D '57.
(MIRA 11:1)

1. Lesotekhnicheskaya akademiya im. S.M. Kirova.
(Lignin)

KOVALEV, V.; TISHCHENKO, D.

Herbicides from phenols of tars produced by the destructive distillation of wood. Zhur.prikl.khim. 31 no.11:1708-1715 N '58. (MIRA 12:2)

1. Lesotekhnicheskaya akademiya imeni S.M. Kirova.
(Phenols) (Herbicides) (Wood distillation)

TISHCHENKO, D.; SHEINA, S.

Demethylation of methyl-phenols. Zhur.prikl.khim. 31 no.12: 1876-1879 D '58. (MIRA 12:2)

1. Lesotekhnicheskaya akademiya imeni S.M. Kirova.
(Cresol) (Methylation)

AUTHOR: Tishchenko, D.

SOV/80-59-1-25/44

TITLE: Acid Condensation of Lignin (Kislotnaya kondensatsiya lignina)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Nr 1, pp 157-166 (USSR)

ABSTRACT: The author tries to establish some relation between the modern concepts on the lignin structure and the phenomenon of its "condensation" or "disactivation". He draws an analogy between the chemistry and technology of phenol-aldehyde resins and the chemistry of the processes of lignin condensation. He points out that phenols react with aldehydes in the presence of alkalis and acids leading finally to the formation of polycondensates, although the condensation does not take place if one of the components of the reaction contains a sulfogroup [Ref. 3]. Therefore the author holds that the phenomenon of condensation of the wood pulp lignin under various reactions and also the protective (against acid condensation) effect of a preliminary introduction of sulfo-groups are sufficiently well explained by the analogies from the chemistry of phenol-aldehyde condensates. He disagrees with the competitive viewpoints of Erdtmann [Ref. 24] and Lindgren [Ref. 32] and adheres to the opinion of Harris and Bergstrom [Ref. 33] though pointing out the insufficient generality of the latter.

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Acid Condensation of Lignin

There are 33 references, 4 of which are Soviet, 10 Swedish, 7 German, 5 English, 3 Canadian and 4 unidentified.

SUBMITTED: May 22, 1957

Card 2/2

KROMINA, L.V.; TISHCHENKO, D.V.

Chemical composition of soluble spruce tar from a combustion chamber of a V.V. Pomerantsev's-type producer. Gidroliz. i lesokhim. prom. 17 no.3:18-19 '64. (MIRA 17:9)

1. Lesotekhnicheskaya akademiya im. S.M.Kirova.

KOZLOV, V.P.; TISHCHENKO, D.V.

Presence of abietenes and abietins in the neutral oils of the residual resins from the gasification of coniferous wood. Gidroliz. i lesokhim.prom. 18 no.1:12-13 '65. (MIRA 18:3)

1. Leningradskaya lesotekhnicheskaya akademiya im. S.M.Kirova.

STRUNNIKOV, V.N.; TISHCHENKO, D.V.

Chemical nature of water-soluble alkaline lignin. Zhur. prikl. khim. 38 no.11:2545-2549 N '65. (MIRA 18:12)

1. Leningradskaya lesotekhnicheskaya akademiya imeni S.M. Kirova. Submitted April 14, 1965.

[redacted], D.V.; SMETANINA, S.S.

Organic viscosity-breaking agents for drilling muds. Zhur. prikl.khim. 38 no.11:2540-2543 N '65.

(MIRA 18:12)

1. Leningradskaya lesotekhnicheskaya akademiya imeni S.M. Kirova. Submitted October 15, 1963.